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The purpose of this cross-sectional study was to examine selected health outcomes in women aged 55 years and older during retirement and to determine whether a relationship exists between women's health outcomes and aspects of retirement, including status (part or full-time retirement), type (voluntary or forced retirement), and timing (early-prior to age 65-or on-time). This study was guided by the Roy's Adaptation Model, with health viewed as adaptations to the focal stimulus of retirement within the model's four adaptive modes: physiological, self-concept, role function, and interdependence.

Eighty women aged 55 years and older who were retired at least part-time from working outside the home were recruited using convenience sampling from senior and community settings within five southeastern US states (North Carolina, Georgia, Florida, Arkansas, and Louisiana). The average age of participants was 66 years. The average retirement age was 62 years. The majority of women were white, married, non-caregivers, and resided in rural areas.

Health outcomes and health conditions were collected using self-report questionnaires by participants. Health outcomes included physical function, self-assessed health, functionality, and social support. Health conditions included chronic conditions such as diabetes, chronic heart disease, and memory impairment. Differences in the proportion of women grouped by retirement type, timing, or status were examined for measures in each of the four adaptation modes. Retirement group differences were

compared using one-way ANOVA and Chi-square tests. Women's retirement experiences were explored using open-ended questions.

This study generated new knowledge regarding how retirement status, type, and timing relate to essential health outcomes for the fast-growing population of women retirees in the United States. Type of retirement was found to be significantly associated with variables representing all four RAM adaptive modes, with forced retirement showing poorer health outcomes compared to voluntary retirement. Retirement type may have important implications in multiple health-related aspects of what is often a lengthy two-decade retirement period for women. A greater proportion of forced retirees reported diabetes, stroke, and memory loss compared to voluntary retirees in this study. This is significant due to connections previously described in the literature between these health conditions. Forced retirement type was related to lower self-rated health, lower functionality, less participation in volunteer activities, and less emotional support from others. Women of minority race/ethnicity in this study were more likely to have forced retirements than white women. Forced retirement can create an economically-challenging situation that impacts health through a myriad of pathways including lowering self-esteem, decreasing quality of life, and decreasing health-seeking behaviors.

The ability to better predict and address health changes in older women will aid in preserving their safety and independence and help offer the best quality of life for as long as possible. This new knowledge reveals useful information for clinicians and has important implications that may lead to early interventions for this population to improve health outcomes during retirement. In addition, labor or corporate employers should

consider strategies that include greater job flexibility options to increase employee retention and re-evaluate current policies when planning women's retirement.

OLDER WOMEN'S HEALTH OUTCOMES
DURING RETIREMENT

by

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CHAPTER I

INTRODUCTION

Retirement as an established part of society within the United States is a fairly modern occurrence, with prevalence increasing for men in the late 1940s. As retirement became an accepted tradition within society in the United States, research has been conducted to better understand areas related to retirement. Retirement for women is a particularly recent phenomenon with increased importance due to women's expanded workforce participation in the last half-century (Wang, 2013). The concept of women's retirement and associated topics such as health are now viable areas of meaningful exploration.

Retirement is a relevant topic for health care. The population growth, changes in diagnostic and therapeutic technologies, social and community programs, relocation, housing options, family structure, and availability and type of retiree pensions and benefits necessitate a new understanding of the many resources heavily relied upon by older adults in retirement. Retirement, as it relates to health outcomes, has changed over the past fifty years from primarily a brief slowing down and end of life period for men and women, to an active yet challenging two decade period of life transition and adaptation.

An increase in the number of women working outside the home during the past four decades has occurred in the United States and many of these women are beginning

to retire. The role of retirement in the health of women is unclear. Retirement and old age have been traditionally regarded as synonymous (Griffon, Loh, & Hesketh, 2013). Recent research findings regarding the timing of retirement discredit this belief (Wang & Schultz, 2010). Retirement may represent a major alteration in the lives of many and has been considered a key transition in later adulthood (Duberley, Carmichael, & Szmigin, 2014). Retirement is an important and relevant part of aging that is reflected throughout women's later lives and necessitates adapting to many physiological, mental, and social changes (Lips & Hastings, 2012). The average age for women to retire in the United States is reported to be 62 years (Munnell, 2015).

Socioeconomic status is defined as the combined economic and sociological measure of the social standing or class of an individual or a collective group, often determined using a combination of income, occupation, and education (American Psychological Association, 2015). The socioeconomic environment surrounding how and when employees retire has changed in the past few decades due to transformed Social Security benefit rules, pension alterations or eliminations, and health care benefit reductions or eradications (Wang, 2013).

Health is an important factor in the lives of older women. Good health encourages functional independence in the later lives of women and higher quality of life and lower health costs to both the individual and to society. Chronic, non-communicable diseases (NCDs) form a set of conditions that can result in long-lasting health concerns and ongoing treatment. Chronic conditions collectively are the largest cause of mortality and disability worldwide (Riley & Cowen, 2014). In order of prevalence, NCDs worldwide

include cardiovascular disease, cancer, injury, chronic respiratory disease, and diabetes. All of these conditions have high prevalence and incidence in older adults (Riley & Cowen, 2014). In the United States and many other nations, there is a growing number of older adults and these individuals are living longer lives. The increase in longevity in the United States and larger numbers of these individuals places greater pressure on the health care system that can be unprepared to care for this growing population (Centers for Disease Control and Prevention [CDC], 2013a).

Purpose of the Study

The purpose of this study was to examine selected health outcomes in older women during retirement and to determine whether a relationship exists between women's health outcomes and aspects of retirement, including status, type, and timing. Due to the relatively new occurrence of a large cohort of women retiring from working outside the home, very few studies have explored women's health and well-being during retirement. Of the studies that have examined the effects of retirement on health outcomes, very few have studied women and there is little consensus of findings. Such a dramatic change in circumstances for many women in the United States and other countries implores the question as to whether the life course for older women retiring from working outside the home somehow alters well-being and health outcomes. The high number of chronic illnesses and associated increase in disability and decrease in functionality in the aging female population compels the need to address predictive measures, with the aim to avoid, slow, or stop chronic disease progression and increase health-related quality of life (HRQOL) (Healthy People 2020, 2015a).

Background

Retirement as a concept is complex and often not universally well-defined across disciplines (Wang, 2013). The concept of retirement does not equate to a one-time event. Rather, it is a transitional time period preceding, including, and following the act of ceasing to work for pay and it often signifies an end of an era and a beginning of a new one (Lips & Hastings, 2012). For this study, retirement is defined by two primary attributes including: It is a transitional period surrounding, stopping or changing full or part-time, paid or unpaid employment status and it occurs at a time when a person self-identifies as being retired (Wang, 2013). Many older employees select bridge employment during part-time retirement to transition more gradually into full-time retirement (Hershey & Jacobs-Lawson, 2012). Retirement status may be defined as retired part-time (working 20 hours or less per week outside the home for pay) or retired full-time (not working outside the home for pay). Bridge employment is considered as a sub-retirement status for those retired on a part-time basis. In addition, retirement type may be either voluntary (left on one's own volition) or forced (laid off; fired; pressured to retire). Retirement timing refers to the age of attainment at which one leaves the workforce and may be considered early (prior to age 65) or on-time and later (at or after age 65). Older women make decisions based on these attributes of retirement that have not been fully explored.

To better understand retirement today, a brief historical review is offered. In the United States, approximately 75% of men 65 years or older in 1850 remained in the work force (Wang, 2013). Prior to 1900, many persons worked until they died, although there

were rare occurrences of voluntary retirement, primarily among the wealthy (Costa, 1998). The older workers would gradually adapt to less physically-demanding jobs within their occupational fields or communities. A pension system for Union Civil War veterans was established in 1862 and was the first of its magnitude to provide retirement benefits for older veterans who could prove that they were disabled during the war (Wang, 2012). By 1930, more than 60% of men aged 65 and over remained in the workforce, but that rate quickly fell beginning in the 1950s to approximately 27% by 1970 (Costa, 1998). The establishment of Social Security in 1935 may have contributed to this change (Zickar, 2013).

Revisions made to Social Security beginning in 1950 and continuing throughout the 1970s included additional industries in the coverage (Zickar, 2013). Additional pension benefits and protections for workers followed Social Security in both government and private sectors. This was coupled with increased industrial and mass production manufacturing and exports, as well as child worker laws (Wang, 2013). In 1967, the Age Discrimination in Employment Act (ADEA) prohibited discrimination against workers older than 40 and eliminated age as a requirement in job advertisements (Zickar, 2013). Mandatory retirement ages for all federal and many private employees were abolished by the Mandatory Retirement Act of 1978 (Zickar, 2013). By 1974, the Pension Benefit Guarantee Fund and the Employment Retirement Security Act (ERISA) provided further retirement security (Miller, Lavenberg, & Mackay, 2014). However, there have been cracks in those retirement securities though as the stock market, 401K accounts, and hedge funds were expanded and fraudulent activities occurred, forcing

certain workers back into the employment sector and threatened pension benefit guarantees at the local, state, and federal levels (Armstrong-Stassen & Staats, 2012). In 2012, 20.8% of men and 12.5% of women aged 65 years and older were still in the full-time labor force in the United States and these figures are expected to increase (Kromer & Howard, 2013).

There is no universally agreed upon time when one becomes an “older adult”. Sixty-five years of age has become the unofficially-accepted time point mostly due to Medicare and Social Security guidelines. These regulatory statutes have often gauged the timing of retirement for individuals in the United States, an important milestone for many working older adults. Many of these individuals have begun transitioning to retirement, with one study reporting men and women retiring at 59.7 years and 57.2 years respectively (Metlife, 2012). Another study has reported men retiring at 64 years and women at 62 years (Munnell, 2015). Older individuals repetitively rank maintaining independence as their top priority, even above longevity (CDC, 2013a). Maintaining functional independence with existing chronic illnesses is one of the main challenges to the older adult population (Tabloski, 2006).

Workforce

Employers began to consider women as a useful source of labor during the war years. Directed by the image and mantra of Rosie the Riveter, women replaced men in a myriad of jobs and proved their capabilities in the labor market (Zickar, 2013). Although previously neglected, older workers were often reconsidered for hire during this time. Less than a third of U.S. women remained in the workforce directly following the end of

WWII (U.S. Bureau of Labor Statistics [BLS], 2014). The emergence of women participating in the workforce since WWII began to quickly increase in the 1960s, peaking in 1999 with 60% of U.S. women actively working in the labor market (BLS, 2014). This percentage has decreased since this time, however overall women's participation in the workforce continues to remain high. In 2012, 38% of women between 25 and 64 years old had attained a college degree; this is over three times the number of women earning a college degree in 1970 (BLS, 2014). This increase in education has helped to narrow the wage gap between men and women in the United States. While women in 1979 earned only 62% of what men earned, in 2012, women earned 81% of men's earnings (BLS, 2014). More than half of the women in the United States (57.7%) were a part of the total labor force in 2012 (U.S. Department of Labor, 2014a). Women comprised 52% of the workforce in certain sectors including professional, management, and similarly-related professions (BLS, 2014).

The environment surrounding how and when employees retire has intensely changed in the past few decades due to transformed Social Security benefit rules, pension alterations or eliminations, and health care benefit reductions or eradications. Women often work in part-time employment that does not allow retirement plan participation. There are circumstances for women's working, and retired, lives that are not like that of men due to differing social expectations (Lips & Hastings, 2012). In 2012, 26% of women worked part-time compared to 13% of men (U.S. Department of Labor, 2014a). Only 45% of working women currently participate in a retirement plan (U.S. Department of Labor, 2014a).

For both women and men, health in later life has been identified as an important factor for a successful retirement (Forster & Morris, 2012) and positive aging (Phillips & Ferguson, 2013). National health objectives target older age for key efforts to maintain and improve health. Topics new to Healthy People (HP) 2020 include older adults, health-related quality of life (HRQOL), and dementias, including Alzheimer's disease (Healthy People 2020, 2015b). The newly-added topic for HP 2020 regarding older adults as a health care priority supports the call for preparations of the aging of America. To help combat some of the priority needs concerning older women, one key objective of this topic is to increase the number of older adults who use the Welcome to Medicare benefit, including the Annual Wellness Visit (AWV) for individuals with Medicare age 65 years and older (Healthy People 2020, 2015c). This benefit differs from the usual annual check-up in that it more comprehensively addresses the physical, mental, spiritual, and cognitive aspects of health in older adults. By addressing multiple areas of potential intervention, the older adult may be better assisted in developing positive adaptive behaviors to changing situations and environments.

Retirement has been considered a transitional stressor prompted by many reasons, including fear of the unfamiliar and an uncertain future (Weaver, 1994). An identity shift from employed to non-employed can be a potential stressor, whereby the retiring individual is either grappling with or more smoothly adapting to the change (Lips & Hastings, 2012). Individual characteristics also can play an essential role in this adjustment, with both innate and developed traits such as personality and resilience accounting for some differences in response (Billings & Moos, 1982). Stress has been

associated with certain poor health outcomes. For example, the relationship between stressors and brain impairment is well-documented in humans across the life span (Mount et al., 2011). Older women are having to cope with conflicting messages from society regarding whether they should continue working outside the home to evade poverty and live with higher levels of stress, or retire from the workforce and trade the daily stressors of the job for financial worries (Lips & Hastings, 2012). Discontinuity of employment often occurs with women due to caregiving responsibilities, resulting in both decreased income and poorer health indicators during the retirement years (National Alliance for Caregiving and AARP, 2009).

Significance of the Problem and Study Justification

There is limited research and knowledge regarding how aspects of retirement, such as status, type, and timing, impact health outcomes in women. As men constitute the majority of traditional workforce participants, more extensive retirement research has been conducted with men, however, with inconclusive results. The ability to better predict health outcomes that exist with prevalent comorbidities in older women may allow for earlier use of medications and non-pharmacological interventions that could improve functionality, alleviate worsening of symptoms, maintain independence, and improve HRQOL. For example, predicting Alzheimer's disease (AD) earlier may give rise to time and opportunity for nursing implementations regarding safety and education and improve access to medical and support services (Alzheimer's Association, 2014). In this way, more "proactive" time through AD prediction and earlier detection would

afford a greater opportunity to make legal, financial, and care plans while the affected individual is still capable.

Our world is getting older with many nations experiencing a shift in age demographics. Older adult population trends reveal that the large increase in older adults, sometimes referred to as the Silver Tsunami, will occur in only a few nations. Countries experiencing some of the largest population booms of older adults include Japan, South Korea, Spain, Italy, Germany, France, Great Britain, China, Brazil, Iran, and the United States (United Nations Department of Economic and Social Affairs, 2013). International collaborations between nations experiencing dramatic increases in older adults allows sharing of implementations regarding how to best manage the increasing number of older adults and their health care needs, including those of older women (Mwangi, Yamashita, Ewen, Manning, & Kunkel, 2012).

Adults born between 1946 and 1964, known as baby boomers, are part of this fast growing age group. Considering the aging baby boomers that began turning 65 in 2011, the number of older adults in the United States is anticipated to double by the year 2030 to approximately 72 million (CDC, 2013a). This means that by the year 2030, one out of every five persons in the United States will be considered a senior citizen. Contributing to this growth is increased longevity due to several reasons, most notably improved health care. Women in the U.S. live longer than men, 81 years versus 76.2 years respectively. The average woman's life expectancy is projected to further increase to 86 years by 2050 (United States Census Bureau, 2014).

As we age, choices are seemingly removed from our options (Higgs & Jones, 2009). The chance of having chronic conditions or a loss in functional independence increases with age. Although people are living longer, two-thirds of older adults are living with more than one chronic condition (CDC, 2013a). Older women are much more likely than men to have higher morbidity prevalence and lower functionality during their later years. As a vulnerable population, older women are susceptible to increased risk factors for certain diseases such as CVD, cancer, and diabetes (CDC, 2013a). Older women also live alone more often and have social support needs during retirement years, further isolating and increasing the risk for depression (West, Cole, Goodkind, & He, 2014).

It is interesting to note, however, that despite the presence of a disability or declining functionality, older adults generally rate their happiness, well-being, and satisfaction with life fairly high. This trend has been reported in the United States (Angner, Ray, Saag, & Allison, 2009; Strine et al. 2008), China (Appleton & Song, 2008), Canada (Public Health Agency of Canada, 2010), Italy and Germany (Gagliardi, Marcellini, Papa, Giuli, & Mollenkopf, 2010), and in the Netherlands, Luxemburg, Italy, Austria, the United Kingdom, and Sweden (Ferring et al., 2004). Perhaps older adults have lower expectations and greater acceptance of the present. Older adults may thus view and judge happiness and well-being in a completely different manner than younger adults. It is important to note that dependence does not result from all forms of chronic conditions, and therefore eliminating or decreasing the dependency factor of chronic conditions results in higher life satisfaction (Angner, Ray, Saag, & Allison, 2009).

A health outcome is defined as the end-result or impact that healthcare activities have on individuals and may include functionality, subjective health, experiential state, physiologic measures, and mortality (Parrish, 2010). Health outcome is, therefore, a results-oriented term that reflects on how healthcare interventions affect an individual's disease symptoms, ability to do as one wishes, and if the individual lives or dies. Health outcomes are the foundation of value-based healthcare and consider not only disease progression or remission, but healthcare costs and patient satisfaction (Agency for Healthcare Research and Quality [AHRQ], 2015).

Economics of Retirement and Aging

Older adults (86%) reported that Social Security was their main income source in 2010 (Administration on Aging, 2012). Women have emerged as either primarily or substantively contributing financial supporters of households in the United States and many other nations (Lips & Hastings, 2012). Earnings for women are lower than that of their male counterparts and women are more likely than men to leave the workforce over longer periods to raise children and care for grandchildren and ailing parents (Lips & Hastings, 2012). Compared with men, women are more likely to retire due to a family member's health, especially a spouse's ill-health (Moen, 1996; Szinovacz & Davey, 2005). This loss of income reveals not only in the present time in terms of annual income, but also when calculating benefits for Social Security and/or pension plans. Socioeconomic status affects one's health throughout the life course, so it would seem reasonable that it would influence health through the retirement period as well (Marmot & Wilkinson, 2006). Women who work outside the home may enjoy a higher

socioeconomic status, and likely a higher standard of living. With retirement, their socioeconomic position may be lowered with resulting negative health consequences due to a myriad of reasons, including limited access to healthcare.

In addition to working outside of the home, women in the US and worldwide have traditionally, and continue to, carry a disproportionate amount of caregiving burden for others, leading to increased stress and heightened risks for health care problems (Viana et al., 2013). The majority (60%) of women in their 50s work full-time with participation in the workforce decreasing after age 62 until age 65, when they continue working at approximately half the rate that they did in their 50s (National Institute on Aging [NIA], 2015). Additionally, women are more likely to work part-time than men after age 65 (BLS, 2014). Due to women's higher longevity, the cost to cover more years during retirement is often higher for women (CDC, 2013a).

The social impact of retirement for women includes several issues. Retired women are more likely to be unmarried than married in the United States (47.1% versus 35.1%) (National Institute on Aging [NIA], 2015). Compared with men, there are many more widowed older women (43% versus 13%) due to increased longevity in women and because women generally marry men older than themselves (West, Cole, Goodkind, & He, 2014). This trend leads to a greater number of older retired women living alone and this percentage continues to increase with age with 29% of women age 65–74 years living alone and 48 percent of women age 75 years and older living alone (NIA, 2015). Living alone has been highly associated with isolation and depression in older adults (Singh & Misra, 2009).

Trends in demographics in the last fifty years, including overall population aging, increased longevity, and decreasing median retirement age, have influenced retirement and retirement research efforts. Older adults are living longer and are generally healthier than previous generations (CDC, 2013a). There is disagreement among retirement researchers in how to best assist with financial aspects of aging during retirement. At its core, the argument appears to center around whether retirement is a right or a privilege (Wang & Schultz, 2010). As an entitlement, the stance is essentially that, while living longer and overall healthier, older adults should not have to work longer and deserve the retirement earned from a life's worth of work. The opposing viewpoint is that if one is healthy and living longer, a longer working life should be expected. These two perspectives focus on the economic aspects of either working at current age expectations or longer. However, both fail to consider how aspects of retirement or longer years of employment may affect health. Considering escalating healthcare costs for older adults, understanding the relationship between health and retirement is essential. This information may prove useful to future retirement policy recommendations for Social Security and Medicare.

Health in Retirement and Aging

Chronic conditions can substantially influence the lives of older adults. Diabetes has a profound impact on adults aged 65 and older, with diagnosed cases in over a fourth of the older adult population, or 11.8 million older Americans (CDC, 2013c). Diabetes is related to multiple complications, including cardiovascular disease (CVD), kidney disease, blindness, and amputations of lower limbs, resulting in significant disability and

loss of functionality (CDC, 2013c). Medical costs for those with diagnosed diabetes are 2.3 times greater than for those without a diabetes diagnosis and therefore predictive measures towards earlier detection and intervention is essential (CDC, 2013c).

Cardiovascular disease (CVD), including hypertension, coronary heart disease (CHD), heart failure, and stroke, is the second leading cause of disability in the United States, after arthritis (Yazdanyar & Newman, 2005). Between 70 - 75% of older adults aged 60 – 79 years have CVD and this increases to 79 - 86% for adults aged 80 years and older (Yazdanyar & Newman, 2005). The prevalence of CVD in women between the ages of 60 – 79 years is approximately the same as that in men, 72.6 % vs 73.3% respectively. At age 80 years and older, women have a higher prevalence of CVD, 85.9% compared to men at 79.3% (Lloyd-Jones et al, 2009). In terms of mortality, 82% of the 864,480 deaths attributable to CVD in the United States in 2005 occurred in adults aged 65 years and older (Yazdanyar & Newman, 2005). Cardiovascular disease is the most expensive disease class in the United States, with adults age 65 and older accounting for almost three-fourths of the \$475 billion in total expenditures in 2009 (Lloyd-Jones et al, 2009). With the increasing number of women retiring over the next few decades as the baby boomers continue to leave the workforce, a better understanding of factors affecting their health outcomes is needed.

Possible health-related implications of retirement would have an impact on policy proposals aimed at adjusting the age for full retirement benefits from public and private organizations. This influence needs to be considered in how the older population may be affected by such changes. Should retirement negatively impact critical health outcomes,

continuing employment at some level may not only assist in filling important needs in the labor market and maintain income for older women, it may also positively impact the individual's health status. Irrespective of positive or negative implications of retiring, considerations for the relationship between retirement and health outcomes in older women need to be evaluated prior to implementing policy alterations to vital public programs such as Medicare and Social Security.

Roy's Adaptation Model (RAM)

Roy's Adaptation Model of Nursing (RAM) developed by Sister Callista Roy (Roy, 2009) will guide this study. The model views the individual as a system composed of biological, social, and psychological parts that continuously interact with an ever-changing environment. A person is in constant interaction with stimuli present in the environment. As the facilitator of adaptation, nursing concerns itself with assessing the person based on adaptation level and existing stimuli in order to promote a positive adaptive response through stimuli or environmental manipulation. The older woman experiences many changes in her immediate environment and must positively adapt in order to reach health, the ultimate adaptation goal. The theory contains four interrelated adaptation modes including physiological, self-concept, role function, and interdependence. The RAM goal of nursing is to assist with positive health outcomes through the four adaptation modes. This study considered the concepts of focal stimuli and the physiological, self-concept, role function, and interdependence adaptation modes and associated mode indicators.

Roy states that adaptations “use conscious awareness to create human and environmental integration” (Roy, 2009, p. 29). The integration of new experiences in a changed lifestyle for the retired woman offers a beneficial picture of adaptation during retirement. Positive adaptations aid in “survival, growth, reproduction, mastery, and human and environmental transformation” (Roy, 2009, p. 39). Roy defines health as a “process and a state of being integrated and whole” (2009, p. 12). While health is not equivalent to adaptation, adaptation needs to occur as a requirement for health. It is useful, therefore, to consider health outcomes as adaptations.

Sister Callista Roy developed the Adaptation Model of Nursing in 1976 and it has become one of the most well-utilized theoretical models in nursing (Tabloski, 2006). Roy’s Adaptation Model is a grand theory that has resulted in the development of middle range adaptation theories (Alligood & Tomey, 2010; DeSanto-Madeya & Fawcett, 2009; Roy, 2009). Using the RAM to explore older women’s retirement and health outcomes provides a foundation to explain the adaptation process. Older women experience changes in their environment and must adapt in order to reach health as the outcome of this adaptation.

The RAM is appropriate for use with older women’s health outcomes during retirement due to its holistic nature. The RAM is holistic in that it considers the physical, spiritual, emotional, cognitive, and social domains of human beings. These domains are represented by the four adaptive modes in the RAM (Alligood & Tomey, 2010). The adaptive modes are interconnected whereby a change in one mode may elicit a change in other adaptive modes. For example, relationship changes in the role function mode may

elicit alterations to one's self-concept. The presence of a health condition in the physiological mode may change functionality and activities in the role function mode.

Essential components of adaptation in the RAM for use with older women's health outcomes in retirement include the four adaptive modes: physiological, self-concept, role function, and interdependence (Roy, 2009). Human beings have basic needs and life processes that support these needs in each of the four adaptive modes (Rogers & Keller, 2009). For example, in the physiological mode, there are five basic needs for a human being: oxygenation, nutrition, elimination, activity and rest, and protection (Roy, 2009). Life processes that support these needs in the physiological mode include processes such as respiration, digestion, sleep, and metabolism (Alligood & Tomey, 2010). The evaluation of how these life processes maintain the basic needs of an adaptive mode represents the individual's adaptation level (Rogers & Keller, 2009). A focal stimulus challenges the human being and a corresponding adaptation level compensates in order to continue supporting the basic needs (Roy, 2009). The adaptive response is the response that a human being has to stimuli that either enables or impedes adaptation (Alligood & Tomey, 2010). An adaptive response may be effective (adaptation) or ineffective (maladaptation). Adaptation supports wholeness and health while maladaptation can threaten health and well-being (Rogers & Keller, 2009).

The physiological adaptive mode involves the human being's interaction with the environment relative to the physical body (Roy, 2009). Physiological integrity is supported by the five basic needs. Additionally, four complex processes assist in maintaining physiological integrity: senses, fluid and electrolyte/acid base balance,

neurological function, and endocrine function (Ursavaş, Karayurt, & İşeri, 2014). The human being can be seriously and negatively affected by poor adaptation levels in the physiological mode for any extended amount of time (Rogers & Keller, 2009).

The self-concept adaptive mode embraces “the need to know who one is so that one can be or exist with a sense of unity” (Roy, 2009, p. 44). Self-concept considers an individual’s emotions and spirituality and, as such, translates to a self-perception that may be affected by interactions with others (Ursavaş, Karayurt, & İşeri, 2014). Life processes that support the self-concept adaptive mode include the developing self, the perceiving self, and the focusing self (Roy, 2009, p. 325). Personal reflection, a preference for wholeness, others’ opinions, and maturation influence a human being’s self-concept (Roy, 2009).

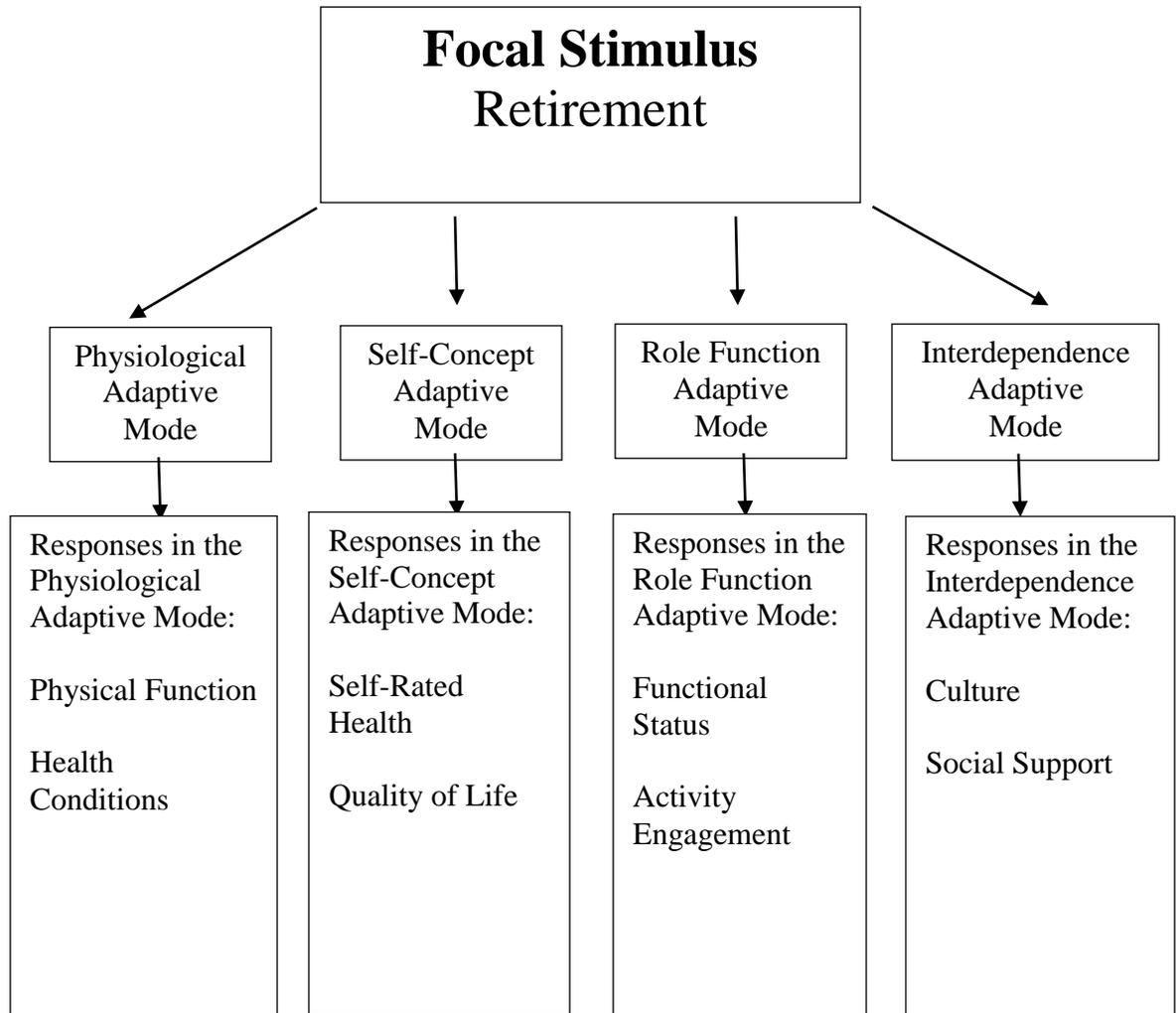
The role function adaptive mode addresses how a human being functions and relates to others. Social integrity is the basic need in this adaptive mode (Roy, 2009). The role function adaptive mode considers the changing and summative roles that human beings face throughout the life span (Roy, 2009). Life processes supporting the basic need include understanding one’s position in society in relation to others. These life processes strive to assist the individual in successfully transitioning to new roles (Rogers & Keller, 2009). Retired women encounter many changing roles and transitions. Conflict in roles and transitioning hindrances during retirement represent maladaptive or ineffective adaptation levels.

The interdependence adaptive mode of the RAM includes the basic need for relationship security with others (Roy, 2009). Life processes in this adaptive mode

include developmental and affectional adequacy (Roy, 2009). Developmental adequacy is a process that supports security in relationships through maturation or learning. While an individual's dependency on others may be greater at times, this can change with the individual achieving developmental adequacy (Ursavaş, Karayurt, & İşeri, 2014). Affectional adequacy is a process that fills the need for security in relationships through giving and receiving "love, respect, nurturing, knowledge, skills, commitment, time, talents, and material possessions" (Roy, 2009, p. 386). Figure 1 offers an overview of the RAM as it was utilized in this study.

In this study, the literature on women's retirement and health indicators within the physiological, self-concept, role function, and interdependence adaptive modes were reviewed. Retirement is a focal stimulus in the environment immediately facing many older women. The physiological adaptive mode includes physical functioning and health conditions of women during retirement. The adaptive mode of self-concept considers women's self-rated health and quality of life during retirement. Older women's functional status and activity engagement during retirement are contained within the role function adaptive mode. The interdependence adaptive mode reflects women's culture and social support during retirement.

Figure 1. Adaptation During Women’s Retirement



Conceptual Definitions

Focal Stimuli

Focal stimuli is defined as “the internal or external stimulus most immediately in the awareness of the individual or group - the object or event most present in the consciousness” (Roy, 2009, p. 35). Retirement is a focal stimulus within the environment for older women working outside of the home. As one approaches retirement as well as

post-retirement, one is confronted with the inevitable changes associated with this pivotal time. For many, retirement and associated lifestyle and relationship adaptations become the major concern of the individual and often the individual's family.

Contextual Factors

Contextual factors are features that surround and help to define individuals (Agency for Healthcare Research and Quality [AHRQ], 2015a). An individual can be organized into groups based upon contextual factors. These types of factors potentially influence health outcomes in negative or positive ways (AHRQ, 2015a). Contextual factors considered within this study included: Age, BMI, marital status, educational level, race/ethnicity, caregiver status, and rural status.

Physiological

Physiological adaptation mode is defined as physical or physiological measures such as bodily functions (Roy, 2009). Aging women are undergoing multiple physical changes and thus assessing for adaptations in the physiological mode is appropriate. Indicators of physiological adaptation include physical function and health conditions.

Physical function is defined as the dimension of function that includes an individual's sensorimotor performance (Jette & Cleary, 1987). This includes walking, bathing, dressing, eating, toileting, brushing teeth, and other basic activities of daily living. Physical function is closely related to functional status, independence, and disability in older women (CDC, 2013b).

Health condition is defined as an illness, injury, impairment, or physical or mental condition or status (CDC, 2015a). Prevalent health conditions in older women include:

cardiovascular disease (CVD), cancer, diabetes, peripheral vascular disease (PVD), stroke, myocardial infarction (MI), hypertension (HTN), arthritis, asthma, osteoporosis, depression, and cognitive changes, including dementia and Alzheimer's disease (AD). Older women are more likely to have hypertension than men with 51% prevalence for women and 45% in men (Robinson, 2007). The risk of hypertension and cardiovascular disease (CVD) increases in older women due to the loss of pre-menopause protection, and this is particularly concerning in the older African-American (AA) female population due to the especially high rates of hypertension in this group (American Heart Association, 2015). Increased prevalence of cardiovascular disease (CVD) and cancer in older women during retirement indicates the need for interventions commonly implemented for these conditions such as diet modification, exercise, smoking cessation, and due to its high association with CVD, diabetes control to assist in improving physical health (CDC, 2013c). Additionally, arthritis and asthma are more prevalent in older women than men and osteoporosis is an especially underdiagnosed disease in older women (Robinson, 2007).

Changes in mental health appear to be related to women's retirement. Involuntary early retirement related to organizational changes for female manual workers, but not male manual workers or female non-manual workers, was found to be associated with decreased mental health, possibly related to a lack of pension or funding that lowered standards of living for these women (Artazcoz, Cortès, Borrell, Escribà-Agüir, & Cascant, 2010). Conversely, scores on the Center for Epidemiologic Studies Depression Scale (CESD) were overall higher for women after retirement, compared to before

retirement, implying overall improved mental health post-retirement for women when forced retirement is not an issue (Mandal & Roe, 2008).

Self-Concept

Self-concept is defined as the composite of beliefs including spirituality and feelings one has for oneself at a given time (Roy, 2009). Older women's self-concept may fluctuate as they age due to physical and mental ability changes or role alterations such as with retirement. Certain chronic conditions occur more frequently in older women than older men and can have a significant impact on a woman's quality of life (Robinson, 2007). Indicators of self-concept adaptation include self-rated health and health-related quality of life.

Self-rated health is defined as how one perceives one's own current state of health (CDC, 2013b). It may be a response to a single question about general health or combined responses from a more complex instrument. Self-rated health is also known as self-assessed health, self-reported health, or perceived health. Retirement has been reported to have an impact on self-perceived health in women (Artazcoz, Cortès, Borrell, Escribà-Agüir, & Cascant, 2010; Hammerman-Rozenberg, Maaravi, Cohen, & Stessman, 2005). Self-perceived health ratings appear to follow assessments of mental health, whereby when one is high, the other is as well. Women reported lower ratings of self-perceived health in situations when they were forced to retire from their manual labor jobs (Artazcoz, Cortès, Borrell, Escribà-Agüir, & Cascant, 2010). Women described higher self-perceived health and increased levels of independence when continuing

employment beyond the age of 70 years (Hammerman-Rozenberg, Maaravi, Cohen, & Stessman, 2005).

Health-Related Quality of Life (HRQOL) is defined as “a multi-dimensional concept that includes domains *related* to physical, mental, emotional, and social functioning. It goes beyond direct measures of population *health*, *life* expectancy, and causes of death, and focuses on the impact *health* status has on *quality of life*” (Healthy People 2020, 2015a). To clarify the distinction between terms, quality of life describes a person’s well-being in relation to how satisfied they are with life as a whole (Ferrans, Zerwic, Wilbur, & Larson, 2005). Improving HRQOL in older women with functional limitations is a key challenge for the existing health care system in the United States (CDC, 2013b). Research studies are conducted with older adults with the overall goal of improving the health-related quality of life for these individuals with common health conditions.

Role Function

Role function is defined as a set of expectations about how a person functions and relates with others (Roy, 2009). Aging women experience role changes within families, such as in widowhood and children leaving the home, as well as role changes that accompany a change in working status. Indicators of role function adaptation include functional status and activity engagement.

Functional status is defined as “the capacity to engage in activities of daily living and social activities” (Starfield, 2001). Functional status includes more than physical capacity and is closely related to independence. Independence is defined as “the ability to

perform an activity with no or little help from others, including having control over any assistance required rather than the physical capacity to do everything oneself” (World Health Organization [WHO], 2007). Activities measuring functional status include cooking, driving, using a computer and/or telephone, shopping, handling finances, and managing medications. Older patients constantly rank maintaining independence through continued functionality as their top priority (CDC, 2013b).

Activity engagement is defined as participation in a broad range of activities (Potočnik & Sonnentag, 2013). Such activities may include caregiving for a child, grandchild, older adult, or a sick/disabled adult, performing voluntary or charity work, providing assistance to family and friends, club membership and involvement, educational endeavors, and attending religious-affiliated events. Many older adults in the United States remain actively engaged well into their postretirement years (Caro & Bass, 1997). Almost one-fifth of adults age 75 and older have reported engaging in non-paid volunteering and caregiving (Burr, 2007). Engaged retirees have been associated with better self-assessed quality of life and reduced depression (Potočnik & Sonnentag, 2013). Engaging in some activities may be associated with health outcomes through the mechanism of goal achievement and validation of competence (Potočnik & Sonnentag, 2013). This mechanism, however, does not apply for all activities of engagement, particularly activities related to high levels of stress and burden such as caregiving (Choi, Burr, Mutchler, & Caro, 2007). Activities of engagement can be categorized as productive activities or leisure activities.

Productive activities is defined as “any activity that produces goods or services, whether paid for or not.” (Morrow-Howell, 2000). Important productive activities in later life include volunteering and caregiving. Volunteer work is defined as “unpaid work on the part of an individual or a group of individuals with the intent of benefiting others ... with whom one has no contractual, familial, or friendship obligation” (Van Willigen, 2000, p. S308). Women in the United States volunteer at a higher rate than men (28.3% versus 22.0%) and this trend occurs across all major demographic groups (U.S. Department of Labor, 2014b). The extent of time dedicated to voluntary activities by older adults in the United States is substantial (Hendricks & Cutler, 2004). Volunteering is related to an increased quality of life and improved health and well-being (Hao 2008; Wahrendorf & Siegrist, 2010).

Women in the United States spend an estimated 35 years of their lives caring for members of their family (Davis, 2005). Women tend to engage in more direct caregiving activities that benefit family members than men (Johnson & LoSasso, 2000). Caregiving activities are most common for late middle-aged and older individuals, with the former caring for aging parents and the latter caring mostly for a spouse (Herzog et al., 1989). While rewarding in some ways, caregiving is often an activity engaged in solitude and decreases the caregiver’s time and energy, discouraging involvement in other activities (Zacher, Jimmieson, & Winter, 2012). Studies on caregiver health have reported poor health outcomes in caregivers, with increased levels of depression and loneliness (Choi, Burr, Mutchler, & Caro, 2007; Pinguart & Sorensen, 2003).

Leisure activities is defined as activities that yield primarily personal benefits (Morrow-Howell, 2000). While productive activities have a clear social benefit, leisure activity engagement is mainly for the individual's enjoyment, although some social benefit may exist (Morrow-Howell, 2000). Leisure activities include taking a training or educational class, providing a community service, attending a social outing such as a cultural or sporting event, belonging to and participating in a club or political activity, and involvement within a religious organization. Participation in a religious organization is related to a decrease in depressive symptoms in retirees (Potočnik & Sonnentag, 2013; Schaie, 2004). Community service engagement has been associated with positive affect (Dulin & Hill, 2003) and life satisfaction (Harlow & Cantor, 1996) in older adults, while taking an educational class or attending a sport or social club activity has been associated with improved health outcomes (Biddle, 2000; Taylor et al., 2004).

Interdependence

Interdependence is defined as a mutual reliance between the individual and others, as with giving and receiving care or love in a relationship (Roy, 2009). Older women often struggle between the desire to remain as independent as possible and the often harsh reality that they may require some dependence upon others for daily living. Indicators of interdependence adaptation include culture and social support.

Culture is defined as the entirety of attitudes, customs, and beliefs that distinguishes one group of people from another (Schim, Doorenbos, Benkert, & Miller, 2007). Culture also includes "the values, beliefs, norms, and lifeways of a particular culture that guides thinking, decisions, and actions in patterned ways and often inter-

generationally” (Leininger & McFarland, 2002). The US population is getting more diverse. While the non-Hispanic white population is projected to decrease after 2024, all other races are projected to increase in this time frame. No other race is anticipated to expand as much as the Hispanic population in the US, with one out of three projected individuals in the US to be Hispanic by the year 2060 (United States Census Bureau, 2014).

With respect to population culture, older women belonging to the Baby Boomer generation do share some similarities across races, ethnicities, and religions. Some of these likenesses include cultural elements such as traditional family roles, gender roles, and women more consistently working outside of the home as a dramatic change to the traditional women roles in the United States (Carstensen & Hartel, 2006). Many of these women were a part of or at least witness to the shifting socio-political scene of the 1960s in the United States. The free speech movement and changes regarding a woman’s right to birth control occurred when these women were in their twenties and thus this culture shares a common bond of their rights to question authority and vocalize opinions. Many marched for equal rights for blacks, women, and those of different sexual orientation, and they rallied for peace, graduated college at increased rates, and had fewer children (Carstensen & Hartel, 2006). Women have increasingly become a driving force in consumerism, making purchasing decisions for homes (91%) and cars (60%) and this consumer-savviness does not end with these types of material purchases (Carstensen & Hartel, 2006; Payne & Doyle, 2010). Older women are becoming educated health care

consumers, researching for online health information and frequently bringing it to the physicians' office to initiate further questioning and discussions (CDC, 2013a).

Social support is defined as an awareness that individuals have that they are loved, cared for, and valued (Lentjes & Jonker, 1985). People do not exist in a vacuum, but are rather influenced by and influence others. The need that older women have for social support is well-documented in the literature as including networks that are formed on a more intimate level and those extending into the community. The retirement period is likely to bring about a different social situation from pre-retirement that may have lasting effects on one's health and well-being.

Available family caregivers for older adults are declining and many older women will transform from caregivers to care receivers (CDC, 2013a). Reliance on home health care agencies and long-term care facilities is likely to increase due to this projected lack of social support on the home front. Nearly half of women age 75 years and older (46%) live alone (Administration on Aging, 2012). Some differences in living arrangements have been reported based on race / ethnicity with black and non-Hispanic white women 65 years and older living alone more frequently, at 40% and 41% respectively, compared to older Asian women at 20% and older Hispanic women at 25% (West, Cole, Goodkind, & He, 2014). With a greater number of older women living alone, due to widowhood, divorce, or choice, there is an even more pronounced need for supportive personnel for a multitude of reasons, including the priority of safety.

Research Questions

The aim of this study was to examine selected health outcomes in older women during retirement and to determine whether a relationship exists between women's health outcomes and aspects of retirement (status, type, and timing). The following five questions explored health outcomes in older women during retirement:

Research Question 1

What aspects of women's retirement (status, type, and timing) are related to the contextual factors?

Research Question 2

What retirement aspects (status, type, and timing) are associated with differences in physiological adaptations during women's retirement?

Research Question 3

What retirement aspects (status, type, and timing) are associated with differences in self-concept adaptations during women's retirement?

Research Question 4

What retirement aspects (status, type, and timing) are associated with differences in role function adaptations during women's retirement?

Research Question 5

What retirement aspects (status, type, and timing) are associated with interdependence adaptations during women's retirement?

Summary

The increase in the older adult population in the United States due to aging baby boomers and increased longevity leads to pressing needs to better understand health outcomes in aging women. Women represent nearly half of the workforce of the United States and are beginning to retire in large numbers. The working careers of women appear to be different from that of men, with overall lower wages and discontinuity of employment due to childbirth and family caregiving responsibilities. Women's retirement differs from that of men, most notably in socioeconomic situation as a result of discontinuous workforce participation and the length of time spent during retirement. Health conditions and healthcare needs of older women during the lengthy retirement period reinforce the importance of retirement as a topic in healthcare. The representation of women as participants in health and retirement research is lacking. The need for research that includes women retirees in study samples is substantial.

The question of whether and how aspects of retirement are associated with the health of older women is meaningful for efforts to maximize health in later life, minimize escalating health care costs, and impact policies regarding public programs such as Medicare and Social Security. This study examined selected health outcomes in older women during retirement and concludes whether an association exists between these health outcomes and aspects of retirement. The theoretical foundation of the study was Roy's Adaptation Model of Nursing. This conceptual framework proposes that the way women adapt to the focal stimulus of retirement results in both positive or negative health outcomes and thus adaptation.

CHAPTER II

REVIEW OF THE LITERATURE

Concerns regarding health during one's later retirement years do not usually begin at age 65 but are more often complicated, with some predictability and some surprises that may have long-lasting consequences. The vast number of women preparing to retire should be a concern to healthcare providers to prepare for and anticipate this population's future needs. There are circumstances for women's retired lives that are not like that of men due to differing social expectations (Lips & Hastings, 2012). Women's incomes are lower than that of men, with women earning an average of \$39,157 annually compared to \$50,033 for men in 2013 (United States Census Bureau, 2015). Women also experience a greater level of work discontinuity compared to men, with women leaving the workforce over long time periods to care for children and other family members. This discontinuity of labor contributes to lower Social Security and pension benefits during retirement.

Socioeconomic status affects one's health throughout the life course, so it would seem reasonable that it would influence health throughout the retirement period (Marmot & Wilkinson, 2006). This may suggest that while women are working, they possibly retain a higher socioeconomic status and standard of living. Retirement may lower their socioeconomic position with resulting negative health consequences, including lower access to healthcare. For women, subjective social class highly impacts women's physical health after leaving employment, with higher subjective social class ratings

indicating better health and lower subjective social class ratings indicating poorer health (Hyde & Jones, 2007).

Nurses appear to be in an ideal situation to assist older women during the retirement period with health promotion and interventions to improve health. Insights may offer an opportunity to initiate changes to policies, develop culturally-appropriate interventions, and assist with resources required for women's positive adaptation to retirement. Resources are defined as "the total capability an individual has to fulfill his or her centrally valued needs" (Hobfoll, 2002). This capability may consist of an individual's physical resources (McArdle, Vasilaki, & Jackson, 2002), emotional resources (Dormann & Zapf, 2004), functional resources (Potočnik & Sonnentag, 2013), and social resources (Kim & Feldman, 2000). Adjustments made between these resources affect how the individual adapts to retirement, directly affecting the individual's overall health (Gorgievski-Duijvesteijn, Bakker, Schaufeli, & van der Heijden, 2005).

For many older women, retirement is considered a reward for a lifetime's worth of hard labor and achievements. Other women may associate the process of retirement with a painful reminder that life and its many opportunities are fading. Retirement as a concept has been studied in different fields including sociology, psychology, economics, policy-making, and health care, with each primarily focusing on a distinctive point of interest. The phenomenon of women's retirement in this country is fairly novel as women had not begun to work outside of the home for pay in large numbers until the 1960s (Price & Dean, 2009). The specific concept of women's retirement is more limited. Retirement within the science of nursing appears to be studied less than in other

disciplines. Much of the nursing research related to retirement places emphasis on the retirement issues of nurses and how this might affect patient health outcomes. Research concerning health during women's retirement is required for greater understanding of predictive measures for health outcomes and may be a valuable asset to healthcare provider and government agencies covering a large portion of the healthcare costs.

The idea that retirement is associated with health outcomes stems from its transitional nature, resulting in adaptations to one's environment and altering physical, psychological, and social well-being (Kim & Moen, 2002). Literature on retirement's influence on health outcomes has largely used the life course perspective, or stressful-life-event, as a framework for explaining how stress resulting from a key life event can impact health outcomes (van Solinge, 2007). With inconclusive study results, the association of retirement and women's health outcomes remains unclear. This review of the literature will focus on older women and their specific health outcomes during retirement.

Focal Stimuli

The focal stimuli in the RAM designates a single stimulus which is "most present in consciousness" and requires the considerable attention of the human being (Roy, 2009, p. 35). Many focal stimuli have been recognized in literature that has used the RAM as a conceptual framework. For example, some focal stimuli identified from the literature include coping with AIDS (Waweru et al., 2008), receiving a diagnosis of breast cancer (Henderson et al, 2003), and venipuncture (Wendler, 2003). In this study, retirement will be considered the focal stimulus immediately confronting older women.

The Social Readjustment Rating Scale (SRRS) was developed in 1967 by Holmes and Rahe to help identify life's primary stressful events. For each of the 43 stressful life events included in the scale, Life Change Units are awarded based upon traumatic impact as reported by a large sample of participants (Holmes & Rahe, 1967). In spite of considerable criticism for the SRRS since its inception, the instrument remains widely utilized and useful in research regarding stressful events of life (Horwitz, 2007; Scully, Tosi, & Banning, 2000). Retirement from work is ranked tenth in the SRRS, following death of a spouse, divorce, marital separation from a mate, detention in jail or other institution, death of a close family member, major personal injury or illness, marriage, being fired at work, and marital reconciliation with mate.

Retirement as a Focal Stimulus

A primary concern regarding retirement research is the lack of agreement for a definition of retirement among disciplines (Wheaton & Crimmins, 2013). For more than forty years, researchers have attempted to reach a consensus regarding the definition of retirement in order to facilitate meaningful comparison across research results (Wang, 2013). Considering the structural and individualized nature of retirement within different nations and the need for multiple disciplines to conduct research from a unique vantage point, reasons for retirement's definitional ambiguity become more apparent. While small variations in retirement age requirements for full retirement benefits may not make an appreciable difference when comparing research results, other dissimilarities may cause more difficulty. For example, research results from countries with more economy-driven retirements in the form of lay-offs present a vastly different situation from nations that

have mandatory retirement regulations (Wheaton & Crimmins, 2013). Furthermore, the lack of clarity in defining retirement is amplified for women compared to men due to differing social and cultural expectations (Wang, 2013).

Measures of retirement in the literature may be subjective or objective, depending upon how the measure was created and obtained. Information gathered from records of work hours can be an objective way to measure retirement status. This method, however, does not consider the individual's perception of retirement (Wang, 2013). Conversely, the subjective measuring of retirement through questioning an individual on his/her perceived retirement status may be difficult to objectively compare with the status of other individuals. Retirement is now recognized as a process rather than a single occurrence. This process involves decreasing psychological commitment to work and distancing oneself from the work force (Wang & Shultz, 2010). By considering retirement as a developmental process, retirement can be characterized by adaptation (Wheaton & Crimmins, 2013).

In defining retirement in health-related research, the concept has often been described as the process of ceasing work for paid activities (Behncke, 2012; Moon, Glymour, Subramanian, Avendaño, & Kawachi, 2012; Westerlund et al., 2010) or the final exit from the workforce (Kim & Moen, 2002; Lips & Hastings, 2012). Retirement has been defined as freedom from scheduled work (Bonsang, Adam, & Perelman, 2010). Retirement has been defined as both the self-report of whether individuals consider themselves to be retired and whether individuals are currently working for pay (Coe, Von Gaudecker, Lindeboom, & Maurer, 2012). In this last definition, it is necessary for the

individual to consider him/herself retired as well as having ceased work for paid activity. In this study, the utilized definition of retirement was an adaptive period surrounding, stopping or changing full or part-time, paid or unpaid employment status that occurred when a person self-identified as being retired.

Women's Retirement

Differences in career paths between women and men result in dissimilar economic resources during the retirement period. Due to variations in social expectations and demands placed on women and men, women spend less time working in the labor force (United States Census Bureau, 2015). Women have earned lower wages and are more likely to be employed in less-prestigious occupations with fewer benefits compared to men (Lips & Hastings, 2012). Therefore, women often had lower retirement savings and pension benefits (Hyde & Jones, 2007).

Contextual factors impact financial status and health during retirement. For example, marital status may have a positive or negative influence on an individual's economic status during retirement. An intact marriage positively influenced an individual's financial situation during retirement (Wang, 2013). The situation may change when a working husband decides to retire. Women, more often than men, will leave the work force when a spouse does, thus worsening the overall financial status of the couple (Mutchler, Burr, & Caro, 2003; Wang, 2013). Divorce and widowhood initiate a loss of income during retirement and weaken the financial and health resources of the individual (Wang, 2013).

Race and ethnicity influence financial status during retirement. Lengthy periods of discontinuous work and economic concerns resulted in minorities' inability to identify with the role of a retiree (Gibson, 1991). Compared to non-Hispanic whites, blacks and Hispanics were more often unemployed in the immediate years preceding retirement (Knoll, 2011). Retirement due to health reasons and prior to the age of receiving full Social Security benefits occurred more in African-Americans than whites (Knoll, 2011).

Women's work experiences often guide their transitions into retirement. These experiences frequently differed from those of men (Ferree, 1990; Lips & Hastings, 2012). Reported consequences of retirement can be considered as either positive or negative, depending upon the circumstances and individual (Wang, 2013). Flexible working hours afforded through early retirement incentives assisted early retirees in progressively transitioning from full-time work to retirement (Oude Mulders, Henkens, & Schippers, 2015).

Freedom of time is often one of the more obvious outcomes from retirement, giving one more time to do what one wishes without the constraints of work (Clark, D'Ambrosio, McDermed, & Sawant, 2004). For women, this desire may form a very lengthy list or absolutely nothing (Wang, 2013). Premature retirement, or unforeseen circumstances not planned for, may leave the individual in a situation of poverty and possibly a return to employment. Early retirement for aging women may mean a loss of financial stability that has led to health instability (Lips & Hastings, 2012). Retirement has changed the dynamics of relationships with friends, former colleagues, and family

(Wang, 2013). Retiring has been reported to lead to social isolation and feelings of non-productivity and uselessness, or it can bring about a renewed sense of purpose for women (Lips & Hastings, 2012).

Precursors to women's retirement. Determining how and when retirement occurs is often at least partly determined by the organizational arrangement of a society and therefore has varied among countries and even regions (Wang, 2013). The discipline of sociology has studied the concept of retirement as a phenomenon that impacts societal order and functioning (Wang, 2013). Several factors contribute to the retirement decisions of women and many of these same factors are related to health outcomes during the transitional retirement time for women. Types of influences associated with health outcomes during women's retirement have included social, psychological, legal, environmental, and aging factors (Lips & Hastings, 2012). Retirement may be greatly influenced by and likewise have an impactful effect on both women's psychological and physical health (Lips & Hastings, 2012). Legal issues may hinder or be the driving force for women to retire and may also affect the health of retired women (AARP, 2006). The surrounding environment for women during retirement have included many contextual factors that are seen as either health-protective or health-detrimental (Lips & Hastings, 2012).

Antecedents to the concept of retirement have negative or positive characteristics and these determinations may be very person-specific (Wang, 2013). Self-efficacy expectations have contributed to women's retirement in self- assessment of whether or not a woman is actually able to perform her job based upon physical or mental ability

(Lips & Hastings, 2012). Caregiver responsibilities may have driven individuals towards retirement and may have been viewed as either a burden or as an opportunity (Bevans & Sternberg, 2012). In some cases, there may be a drive towards retirement if expectations for retirement outcomes exceed the desire to continue working and in, perhaps more rare cases, financial rewards are no longer needed and so retirement is considered. Other antecedents to retirement have included an employer no longer desiring or needing one's services, a desire for a career change, and a change in social structure such as in a company closing or a death within the family (Wang, 2013).

Findings from one study revealed factors that impacted women's pathways towards retirement with three identified themes: 'there is life beyond work'; 'work as a lifestyle'; and 'there is not much left to live for' (Kloep & Hendry, 2006). Women's reasons for retirement have included finances, health concerns, and caring for others (Wang, 2013). Declining health is reported as a reason to have retired in 35% of women 59 years and younger, but at a much lower rate in women aged 60 years and older (NIA, 2015). Personal health has influenced the retirement decision (Wang, 2013). Compared to men, there is a greater likelihood that women will retire due to an illness of a family member (Szinovacz & Davey, 2005). This gender difference in retirement decision-making may be connected to women's traditional caregiving roles and men's traditional career-oriented roles (Flippen & Tienda, 2000; Reitzes, Mutran, & Fernandez, 1998).

Retirement planning. As the time of perceived retirement approaches, the greater the motivation is for an individual to participate in retirement planning (Ekerdt, Kosloski, & DeViney, 2000). Women, minorities, and other individuals earning lower

levels of income have been less likely to participate in planning activities for retirement (Hershey, Henkens, & Van Dalen, 2010; Taylor & Geldhauser, 2007). Keeping one's health insurance prior to age 65 is one reason often cited by women to delay retirement (Duberly, Carmichael, & Szmigin, 2014). Men are more likely to have invested with greater financial risk and saved more for retirement as part of their planning activities (Glass & Kilpatrick, 1998; Mansor, Hong, Abu, & Shaari, 2015). Compared to men, women's retirement planning activities are reported to be broader and involved more abstract objectives such as "be happy" (Hershey, Jacobs-Lawson, & Neukam, 2002).

Many individuals in the workforce have not directly transitioned from full-time employment to full-time retirement (Tishman, Looy, & Bruyère, 2012). Bridge employment includes part-time or short-term employment that many older employees choose following full-time employment as a way to continue receiving income, yet pull away from the confinements of full-time employment (Hershey & Jacobs-Lawson, 2012). Over the past 20 years, there has been a noticeable increase in the number of workers aged 65 years and older that have been employed with their current employer less than one year (Hershey & Jacobs-Lawson, 2012). This is supportive evidence of the popularity of bridge employment with the over 65 years and older population. Women are more likely than men (40% versus 25%) to have utilized bridge employment as transitional employment prior to retiring to full-time status (Cahill, Giandrea, & Quinn, 2015; Hebert & Luong, 2008; Quinn & Kosy, 1996). Compared to previous generations, early Baby-Boomer women are more likely to have exited their careers in an involuntary manner, such as with layoffs (Cahill, Giandrea, & Quinn, 2015).

How one transitions from paid working life to retirement through adaptive responses may be motivationally-related and indeed outlook perception seems to play a role in this decision-making strategy and presents as a choice (Knoll, 2011). A woman may subconsciously ask “Do I choose to view retirement as a problem or do I choose to view retirement as an opportunity?” This type of decision outlook seems to transcend cultural differences, making it more of the innate human condition. Retirement is a time of transitioning. A transition is a necessary time of adaptation. This study focused on women’s health outcomes as adaptations to the focal stimulus of retirement.

Physiological Adaptive Mode

Many studies have utilized the four adaptive modes within the RAM to understand a variety of phenomena and guide research efforts. The physiological adaptive mode has been represented in the literature by physical symptoms, illnesses, physical function, or other health conditions. In one study, the physiological mode focused on the most distressing physical problem in women with breast cancer (Zeigler, Smith, & Fawcett, 2004), while the physical well-being and worst side effects of cancer treatment in adolescents were examined in a another study (Ramini et al., 2008). In this study, explored areas within the physiological adaptive mode were physical function and selected health conditions in retired women. Health conditions examined included cardiovascular disease (CVD), diabetes, cancer, cognitive impairment, kidney disease, lung disease, peripheral vascular disease, and depression.

Physical Function

Participating in daily activities requiring physical movement has resulted in a reduction of chronic disease risk factors and increased strength in older adults (Jenkins, Pienta, & Horgas, 2002). Activities of daily living, such as bathing, eating, and toileting, require a certain amount of physical functioning. Older women have used a greater amount of long-term and home health care than older men to assist them with these daily living activities (Houser, 2007). This increased outside care utilization may be primarily due to women living longer than men, women are more likely to be single, and women have represented a larger percentage of the frail population (Robinson, 2007). It has been proposed that the reduction of physical and mental demands on women and men during retirement has contributed to both perceived and notable physical health benefits of retirement (Ekerdt, Kosloski, & DeViney, 2000; Westerlund, 2010). In opposition, some evidence has supported a decreased physical health function in women related to retirement (Calvo, Sarkisian, & Tamborini, 2013). Other studies have reported no association between physical health function and retirement (Kremer 1985; Gillanders et. al.1991).

Women have been reported to engage in bridge employment more often than men (Hebert & Luong, 2008). In one study, women and men who participated in bridge employment as a way of leaving full-time employment had lower declines in physical functioning than those who left full-time employment and moved directly to full-time retirement status (Zhan, Wang, Liu, & Shultz, 2009). This same study utilized a population of women and men aged 51 to 61 years with women comprising more than

half of the study participants (55.9% women in the first study subset and 58.1% women in the second study subset) (Zhan, Wang, Liu, & Shultz, 2009). The authors have suggested that study results were in line with continuity theory in that physical activity levels were better maintained through the daily routine that bridge employment offers (Zhan, Wang, Liu, & Shultz, 2009). Retirement on a full-time basis may have resulted in a decrease in activities of daily living for some retirees (Kim & Feldman, 2000). This reduction in daily activities may have led to decreased physical functioning.

Early retirement is a term applied to the act of retiring prior to the age when one can receive full benefits from Social Security and Medicare in the United States. In one study, early retirement was found to reduce overall physical health functioning in older adults (Calvo, Sarkisian, & Tamborini, 2013). Conversely, some studies have reported positive effects of early retirement for retirees. Early retirement's association with sleep quality improvement post-retirement has been reported for older adults (Vahtera et al., 2009). For retired women, the improvement in sleep quality post-retirement was less evident than with retired men (Vahtera et al., 2009). An association between early retirement and a decrease in physical fatigue post-retirement has been reported for older adults in a study that examined physical fatigue levels one year prior to and one year after retirement (OR= 0.27, CI= 0.26 – 0.30) (Westerlund et al., 2010).

Health Conditions

Research focusing on older women's health outcomes during retirement has revealed support for retirement's association with certain health conditions. Retirement was related to a reduction in some symptomology of chronic conditions and was likewise

related to an increase in symptoms in other chronic conditions (Westerlund et al., 2010). Poor physical health has been reported as a result of becoming unemployed (Bartley et al., 2004; Murphy & Athanasou, 1999). For older adults, the quality of retirement is inversely associated with physical health decline during the retirement transition (Kim & Moen, 2002; van Solinge & Henkens, 2008; Wang, 2007). Similarly, physical health measures of retirees have a positive relationship with the quality of retirement transition (Hyde, Ferrie, Higgs, Mein, & Nazroo, 2004; Kim & Feldman, 2000; Pinquart & Schindler, 2007; van Solinge & Henkens, 2008). Contextual factors influence older women's health status during retirement. For example, subjective social class highly impacted older women's physical health status during the retirement years (Hyde & Jones, 2007). Factors such as educational level, reading ability, and physical fitness were related to physical health status in older adults during the retirement years (Colcombe & Kramer, 2003; Jefferson et al., 2011). There has been strong evidential support of the positive relationship between the financial status of retirees and the quality of retirement transition (Choi, 2001; Pinquart & Schindler, 2007; Reitzes & Mutran, 2004).

Cardiovascular disease. Some chronic conditions occur more frequently in older women than older men and can have a significant impact on a woman's overall physical health status. Older women were more likely to have hypertension than men with a 51% prevalence for women and 45% in men in the United States (Robinson, 2007). Hypertension was highly associated with the development of cardiovascular disease (CDC, 2015). In a study by Kivimäki and colleagues, medication adherence for patients with hypertension during retirement was explored (2013). Antihypertensive medication

adherence was examined during the three years before retirement and the four years following retirement in older women and men (N=3468). An increased risk of poor medication adherence was reported for women following retirement compared to prior to retirement (OR 1.25, 95% CI 1.07–1.46) (Kivimäki et al., 2013).

Retirement is a life span milestone that initiates many changes, including changes to one's health (Behncke, 2012). An increase in the cardiovascular disease rate has been reported during the retirement period for both women and men, with no significant differences between genders (Moon, Glymour, Subramanian, Avendaño, & Kawachi, 2012). Early retirements have been implicated in increased risks for cardiovascular disease in both women and men (Behncke, 2012; Moon, Glymour, Subramanian, Avendaño, & Kawachi, 2012). Cardiovascular disease has been highly related to an increased risk for Alzheimer's disease, a health condition that it more than twice as likely to occur in older women than in older men (Moon, Glymour, Subramanian, Avendaño, & Kawachi, 2012). Weight gain was highly linked to increased risk for cardiovascular disease in older adults (CDC, 2015a). Retirement was associated with an increase in weight in women, but not in men (Forman-Hoffman, Richardson, Yankey, Hillis, Wallace, & Wolinsky, 2008).

Diabetes. The age-adjusted incidence of diagnosed diabetes in 2013 was 7.2 (per 1000) for women and 6.4 (per 10000) for men (CDC, 2013c). The age-adjusted incidence of diagnosed diabetes for women continues to increase, while the incidence for men has altered only slightly since 2009 (CDC, 2013c). In one study, early retirement was found to be significantly related to incidence of type 2 diabetes in older adults (Alavinia &

Burdorf, 2008). This same study included 11,462 participants between the ages of 50 – 64 years in the Survey on Health and Ageing in Europe (SHARE). The authors explored associations between having diabetes and three categories of non-employment, including retirement, unemployed, and homemaker. Only the retirement category was found to be significantly associated with having diabetes (OR=1.33, 95% CI 1.05–1.68, $p < 0.05$, adjusted for self-perceived health, sex, age, education, body mass index, marital status, smoking, drinking, and physical activity).

A decline in medication adherence post-retirement has been reported in men with type 2 diabetes, however this was not observed with women (Kivimäki, 2013). Pre-retirement adherence to diabetic medication for women was higher than that with men (3.8% versus 2.3%). The difference in diabetic medication adherence post- retirement between men and women is not known. It is suggested that, compared to men, women's lower socioeconomic situation and the higher out-of-pocket health care costs associated with diabetes treatment may be related to the lower diabetic medication adherence both before and following retirement.

Cancer. Cancer is the second leading cause of death in the United States (Healthy People 2020, 2015d). The three most common cancers in women include breast, lung, and colorectal cancer, with lung cancer being the leading cause of cancer death in women (CDC, 2015b). Retirement in women was associated with an increased risk of being diagnosed with cancer (Behncke, 2012). Behncke examined the causal effects of retirement in older adults and reported a 10 % increase in cancer risk for retirees compared to non-retirees (2012). Cancer risk factors examined in the study include BMI,

cholesterol, and blood pressure (Behncke, 2012). Likewise, the study revealed a higher risk to develop metabolic syndrome, a risk factor for cancer, in retired adults compared to non-retirees (Behncke, 2012).

Nearly 80% of breast cancer survivors return to the workforce after diagnosis and treatment (Lindholm et al., 2014). Compared with women without cancer, breast cancer survivors are more likely to remain out of the workforce through retirement or other unemployed means (de Boer, Taskila, Ojajärvi, van Dijk, & Verbeek, 2009). One study with breast cancer survivors reported that, compared to working breast cancer survivors, retired breast cancer survivors reported weak support from colleagues more often (Lindholm et al., 2014). Among breast cancer survivors, lower education, pain episodes, decreased physical quality of life, and comorbidities were present more frequently with early retired and non-employed survivors than with employed survivors (Lindholm et al., 2014).

Cognitive impairment. Losing one's thinking abilities and mental faculties can be a devastating prospect. Dementia can greatly decrease an individual's capacity to continue social relationships, carry out activities of daily living (ADLs), manage medications and medical disorders, and safely use technologies such as driving a car or operating a stove (Alzheimer's Association, 2014). Women with dementia are at a heightened risk for injury from falls and general disability (Hebert, Weuve, Scherr, & Evans, 2013). The relationship between retirement and cognitive impairment or dementia has been explored to a greater extent than retirement and most other health conditions. Retirement is related to cognition in older women in a way that appears to depend upon

personal choices (Bonsang, Adam, & Perelman, 2010; Coe, Von Gaudecker, Lindeboom, & Maurer, 2012; Potočnik & Sonnentag, 2013; Rohwedder & Willis, 2009).

Early retirement appears to have a significant negative impact on the cognitive ability of people in their early 60s that is both quantitatively important and causal. (Rohwedder, & Willis, 2009). A positive relationship was found between cognitive maintenance and retirement status for blue-collar workers while a negative one was found for white-collar workers (Coe, Von Gaudecker, Lindeboom, & Maurer, 2013). Being a woman is a factor associated with higher levels of episodic memory before retirement. However, being female has been associated with lower levels of mental status at the time of retirement (Fisher et al., 2014). Mental health and an opportunity to control work time have been found to factor in to the ability to extend employment into older age whereas cognitive decline is a factor for retiring earlier and with poorer health outcomes (Virtanen et al., 2014). Length of retirement has been associated with Alzheimer's disease risk in that longer retirement length has been associated with an increased risk for Alzheimer's disease, even after adjusting for age (Ott et al., 1999).

Educational level in older adults has been strongly associated with performance of cognitive activities including global cognition, episodic memory, semantic memory, and visuospatial ability (Jefferson et al., 2011). Education appears to play a protective role in Alzheimer's disease, as increased education showed a decrease in the incidence of Alzheimer's disease in older adults, perhaps owing to some form of built-up cognitive reserve from attaining higher education (Ott et al., 1999). The type of work performed prior to retiring may be similar to educational level in how it factors into Alzheimer's

disease risk for older women. Risk reduction seemed to occur for those that performed work requiring more mathematical and critical thinking skills compared to those that did not (Rohwedder, & Willis, 2009). Older adults who were in occupations requiring more mental activities show a reduction in abrupt memory decline after retirement. (Fisher et al., 2014). In older adults, working in professions with greater mental demand and retiring after one's early 60s were beneficial to maintaining memory during retirement (Rohwedder & Willis, 2009).

Depression. Mental health is a growing concern for older adults in the United States. Depression is frequently found in the older population and is a co-morbidity for multiple health conditions (CDC, 2013a). Among individuals aged 50 years and older, women have reported a greater level of depression than men (8.9% for women versus 6.2% for men) (CDC, 2013a). Older adults aged 50–64 years report more depression than individuals aged 65 years and older (9.4% versus 5%) (CDC, 2008). It has been suggested that retirement may reduce some stressors post-retirement, thus accounting for this decrease in reported depression among the older group (CDC, 2013a). Kim and Moen have found that perception of security was important in retirees' transitions, particularly in staving off signs of depression (2002).

Positive mental health effects have been related to retirement in older adults (Reitzes, Mutran, & Fernandez, 1998; Wheaton, 1990). The mental health of retirees has been found to have a positive association with predictors of retirement adjustment, including wellbeing, retirement satisfaction, and life satisfaction (Hyde, Ferrie, Higgs, Mein, & Nazroo, 2004; Kim & Moen, 2002; Wang, 2007). The findings of this same

study were further supported in another study by Pinguart and Schindler (2007). Scores on the Center for Epidemiologic Studies Depression Scale (CES-D) were overall higher for women after retirement, compared to before retirement, implying overall improved mental health post-retirement for women when forced retirement was not an issue (Mandal & Roe, 2008). In a population of older adults, retirement was found to be associated with lower mental fatigue and a reduction in depressive symptoms (Westerlund et al., 2010).

While retirement has been associated with a decrease in depression symptoms, others have reported an increase in depression symptoms during retirement (Robnett, 2007). Negative alterations to psychological well-being were reported in 25% of female and male retirees initially in retirement, however improvements to mental health occurred afterwards (Wang, 2007). Approximately 5% of retirees in this same study reported positive alterations to psychological well-being. Among three types of workforce exits (retirement, unemployment, and becoming a homemaker), depression was found to be the most important associated health problem (Alavinia & Burdorf, 2008).

Rather than focus on retirement status, some studies have considered retirement type. There is some evidential support that forced retirement appears to negatively impact mental health. For example, involuntary loss of job was found to decrease mental health in older adults (Mandal & Roe, 2008). Among adults aged 51–61 years, involuntary retirement due to job loss was associated with increased risk of clinically relevant depressive symptoms more than two years after retirement (Gallo et al., 2006). Involuntary early retirement related to organizational changes for female manual

workers, but not male manual workers or female non-manual workers was found to be associated with decreased mental health (Artazcoz, Cortès, Borrell, Escribà-Agüir, & Cascant, 2010). The authors in this study speculated that results may reflect the subsequent lack of pension or funding during the forced retirement that lowered standards of living for these women. Older employees face significant tasks of adjustment during retirement (Quick & Moen, 1998), with poor adaptation leading to poor mental health (Wang, 2007). Likewise, retirement maladjustment has been linked to an increase in alcohol use by older adults (Perreira & Sloan, 2001).

Bridge employment is related to depression and overall mental health in older adults. The decision to engage in bridge employment is usually a voluntary one, leading to a reduction in responsibility-associated stress (Shultz & Wang, 2007). Engaging in bridge employment helped older adults preserve measures of psychological well-being during retirement adjustment (Wang, 2007). Retired adults participating in bridge employment within the same field (career bridge employment) had better mental health than individuals who continued working full-time (Zhan, Wang, Liu, & Shultz, 2009). Conversely, bridge employment outside of one's field (non-career bridge employment) showed no favorable impact on the mental health of retired individuals compared to full-time working individuals (Zhan, Wang, Liu, & Shultz, 2009).

Self-Concept Adaptive Mode

The self-concept adaptive mode of the RAM has been represented in the literature in many ways including satisfaction with life, HRQOL, and self-assessed or self-rated health. Within the self-concept adaptive mode, emotions about body and self were

examined with adolescent cancer patients (Ramini et al., 2008). In a study evaluating a community hospital-sponsored support group for women with breast cancer, the self-concept adaptive mode focused on questions regarding feelings and adaptive changes associated with cancer and cancer treatments (Zeigler, Smith, & Fawcett, 2004). In this current study, explored areas within the self-concept adaptive mode included self-rated health and HRQOL in retired women.

Self-rated Health

Self-rated health scores appear to follow assessments of mental health, whereby when one is high, the other is as well (Wang, 2007). Retirement has an impact on self-perceived health in women (Artazcoz, Cortès, Borrell, Escribà-Agüir, & Cascant, 2010; Hammerman-Rozenberg, Maaravi, Cohen, & Stessman, 2005). Retirement lowers self-assessed health in older adults (Alavinia & Burdorf, 2008; Behncke, 2012). Being unemployed, early retirement, and being a homemaker was related to self-perceived poor health in women (Alvavinia & Burdorf, 2008).

Lower perceived health was reported for adults that retired earlier than the set age to receive full benefits for Social Security and Medicare (Ross & Mirowsky, 1995). Self-rated poor health is predictive of early retirement in older adults (Cai & Kalb, 2006; Karpansalo et al., 2004). Compared to women that voluntarily left manual labor jobs, women previously employed in manual labor jobs report lower ratings of self-perceived health (OR= 4.04; 95% CI 1.44-11.32) in situations when they are forced to retire (Artazcoz, Cortès, Borrell, Escribà-Agüir, & Cascant, 2010). Older adults described higher self-perceived health and increased levels of independence when continuing

employment beyond the age of 70 years (Hammerman-Rozenberg, Maaravi, Cohen, & Stessman, 2005).

Health-Related Quality of Life (HRQOL)

Health-related quality of life (HRQOL) focuses on the impact an individual's health status has in relation to how satisfied they are with life as a whole (NIA, 2015). There is limited research in the area of retirement and HRQOL and most of the retirement-related literature focuses on quality of life, life satisfaction, and happiness. Within this literature, there are inconclusive findings. Some studies have reported negative associations between retirement and life satisfaction or quality of life. For example, lower life satisfaction and happiness and a less positive outlook on retirement have been reported for older adults during adjustment to retirement (Kim & Moen, 2002; Ross & Drentea, 1998). Other researchers have found no association between retirement status and quality of life, satisfaction with life, or happiness (Warr, Butcher, Robertson, & Callinan, 2004; Wu, Tang, & Yan, 2005).

Some researchers have reported positive associations between retirement and life satisfaction or quality of life. Retirement was found to positively impact stress levels, quality of life, and life satisfaction in both women and men (Isaksson & Johansson, 2000; Kim and Feldman, 2000). Increased satisfaction with life scores was reported by retirees one year following retirement, with a portion of this increase continuing for more than 6 years post-retirement (Gall et al., 1997). The type of retirement, whether forced or voluntary, may have a significant impact on an individual's quality of life. In a recent study, researchers have reported that voluntary retirees described a higher level of

perceived satisfaction with life when compared to forced retirees for any reason, including health-related ones (Hershey & Henkens, 2013). Older adults that are forced to retire in an involuntary manner have reported perceiving retirement as negative and had lower self-esteems, limited financial resources, and lower quality of life levels post-retirement compared to voluntary retirees (Gowan, 1998; Mein & Ellison, 2006; Shultz, Martin, & Weckerle, 1998).

Role Function Adaptive Mode

The role function adaptive mode has been characterized in the literature as role function stressors, activity participation, role of a group or organization, and functionality. Role function stressors for first-time fathers formed the need basis for role function adaptation and included time for responsibilities, child health concerns, and family member health concerns (Pollack et al., 2005). Participation activities within a breast cancer support group (Zeigler, Smith, & Fawcett, 2004) and the role of a cancer camp for adolescents (Ramini et al., 2008) were explored within the role function adaptive mode. In this current study, areas examined within the role function adaptive mode were functional status and activity engagement in retired women. Activity engagement included both productive activities and leisure activities.

Functional Status

As a primary concern of older adults, maintaining functional ability is a priority for the health care system (Tabloski, 2006). Women and men have engaged in unpaid work in and around the home, however the types of work done by each are often dissimilar (Sayer, 2005). Men have typically engaged in outdoor activities including

home, car, and yard maintenance and repairs (Burr, 2007). Women have performed more overall household labor than men and generally concentrated their efforts in areas such as food preparation, cleaning, and laundry (Burr, 2007). Therefore, the types of activities that women have typically performed often form the basis for the functional status needed for their independence post-retirement.

The literature on women's retirement and functional status is limited and inconclusive. Positive results for retirement's influence on functional status were reported in one study (Mein, Higgs, Ferrie, & Stansfeld, 1998). Study participants included both women and men who reported a reduction in stress during retirement. This reduction in stress aided participants to engage in healthier activities post-retirement, including cooking healthier and exercising more regularly. Participation in these healthier activities resulted in higher functional abilities for these retirees.

Some negative results regarding retirement's effect on retired women's functional status were reported in the literature. Retirement was related to increased reports of difficulty with Instrumental Activities of Daily Living (IADL) (Wang & Shultz, 2010). Early retirees have reported lower levels of functional independence than individuals who continued working at age 70 years (Hammerman-Rozenberg, Maaravi, Cohen, & Stessman, 2005). A reported significant risk for functional status decline in older adults was low-rated subjective social class, or the perception that one is in the lower ranks of a society (Chen, Covinsky, Cenzer, Adler, & Williams, 2012). As subjective social class is typically a measure of socioeconomic status, the mechanism of retirement may involve the lowering of one's economic situation that in turn lowers one's subjective social class.

Activity Engagement

Activity engagement is supported in the literature as important in occupying one's time in a meaningful way and, particularly for women, serves as a means of socialization (Poon & Fung, 2008). In a recent study, functional health status in older adults has been reported to be impacted by psychological resources such as mastery (Sargent-Cox, Butterworth, & Anstey, 2015). Closely related to the concept of self-efficacy, mastery is having control over important life circumstances. Mastery has played an important role in the functional health of older adults through engagement in physical activity (Sargent-Cox, Butterworth, & Anstey, 2015). In another study with retirees aged 55 to 75 years, participants reported to have established new meaning through voluntary and physical activities and experienced a novel stage entitled "Redirection" during the post-retirement period (Cook, 2015).

Activity engagement in post-retirement years has been reported to serve the purpose of structuring one's time and satisfying the desire to influence future generations (Griffin & Hesketh, 2008). Participation in an activity assisted in achieving personal objectives of older adults and contributed to a positive sense of competence in one's current role (Warr, Butcher, Robertson, & Callinan, 2004). In older women, socializing was particularly enhanced through activity engagement (Poon & Fung, 2008). Older adults that engaged in groups, such as those of a religious or social nature, acquired a greater feeling of belonging and purpose (Haslam, Jetten, Postmes, & Haslam, 2009). Positive associations have been reported between productive activities, such as volunteering, and function and mortality during the retirement years (Menac, 2003).

Negative associations have been reported between retirement satisfaction and anxiety regarding maintaining social standing during retirement for older adults (van Solinge & Henkens, 2008). In this current study, activity engagement of older women examined both productive and leisure activities.

Productive activities. Many women and men between 55 and 74 years are reported to maintain active lifestyles during retirement and have participated in a variety of productive activities (Caro & Bass, 1997). Productive activities that women have frequently engaged in during retirement included volunteering and caregiving (Davis, 2005). Participating in certain activities, such as volunteering, improved the quality of life for retirees (Potočnik & Sonnentag 2013; Wahrendorf & Siegrist, 2010). The beneficial properties of productive activities have been related to the amount of control one has had over such activities and personal and social rewards of engaging in the activity (Wahrendorf et al. 2006). Caregiving and volunteering have differed in that caregiving involves limited control over engagement and little social recognition, but volunteering offers more autonomy regarding participation and often greater social reward (Wahrendorf et al. 2006).

Volunteering during retirement has been positively associated with retirement adjustment outcomes in older adults (Dorfman & Douglas, 2005; Smith & Moen, 2004). The literature has been fairly consistent regarding the relationship between volunteering and overall well-being in retirement. Compared with younger women, women aged 65 years and older report greater satisfaction and empowerment from engaging in voluntary work (Kulik, 2010). Well-being and health for older adults during retirement were

reported to improve or be maintained in association with volunteering (de Leon, 2005; Hao, 2008; Luoh & Herzog, 2002; Li & Ferraro 2005; van Willigen, 2000; Wahrendorf et al., 2006). Higher life satisfaction, lower mortality, improved self-esteem, fewer anxiety symptoms, and improved psychological well-being have been reported health outcomes related to women and men's voluntary activities during retirement (Herzog et al., 1998; Mojza et al., 2011; Potočnik & Sonnentag 2013; Thoits & Hewitt, 2001). In one study, voluntary charity work was associated with well-being in retirees, however no relation was found between charity work and older employed adults (Warr, Butcher, & Robertson, & Callinan, 2004). Similarly, another study reported that providing voluntary assistance to others improved quality of life in retired adults but not in older employed individuals (Potočnik & Sonnentag 2013).

Nearly 9.7 million adults over the age of 50 have provided care for their parents or grandchildren (MetLife Mature Market Institute, 2011). Women were more likely than men to be caregivers. Two-thirds of caregivers for family members in the United States were women (AARP, 2014). The majority of activity research with older adults has focused on volunteering and other activities that produced positive outcomes during retirement. Some activities, such as caregiving, have been considered as stressful, health-reducing, and have been studied far less with retirees than more positively-considered activities (Warr, Butcher, & Robertson, 2004).

Activities related to anxiety, stress, a sense of burden, or loneliness are reported to reduce psychological and physical well-being and health (Choi, Burr, Mutchler, & Caro, 2007). Caregiving is often a private activity that can lead to feelings of isolation (Zacher,

Jimmieson, & Winter, 2012). Caregiving activities required a great amount of the caregiver's time and efforts, and limited the retired caregiver's available resources that could have been used in other roles (Zacher, Jimmieson, & Winter, 2012). The literature most often cites negative associations between caregiving and well-being for older caregivers (Lee et al., 2003; Li et al., 2004; Mc Munn et al. 2009; Wahrendorf et al. 2006; Wahrendorf & Siegrist, 2010). Older female caregivers experienced health declines, higher levels of loneliness, and increased at-risk health behaviors as a result of caregiving activities (Choi, Burr, Mutchler, & Caro, 2007; Pinquart & Sorensen, 2003).

Leisure activities. Activity engagement in retirement helps to utilize one's time wisely in meaningful ways. Social roles after retirement are often not clearly defined and can lead to an unclear sense of belonging (Rowe and Kahn 1997). Retirement can offer many opportunities for self-expression and self-realization. Leisure activities including social or educational activities were reported as being positively associated with retirement adjustment and well-being (Dorfman & Douglas, 2005; Kim & Feldman, 2000; Reeves & Darville, 1994). In one study with retired women, 90% of participants reported that engagement in life through social and self-care activities was necessary for successful aging (Rossen, 2008). As one woman in this same study remarked, "I think you have to do everything you can to keep your love of life alive" (Rossen, 2008).

Engaging in religious activities was positively related to health and well-being in older adults (Musick, Blazer, & Hays, 2000; Schaie, Krause, & Booth, 2004). Providing informal assistance to friends, neighbors, and others in the community was associated with increased life satisfaction in older persons (Harlow & Cantor, 1996). Enrolling and

participating in educational classes or physical training was positively related to health and well-being in older individuals during retirement (Biddle et al., 2000). Attending sports or social club activities was reported to improve the quality of life in retirees (McAuley et al., 2005; Potočnik & Sonnentag, 2013; Rejeski & Mihalko, 2001). This improvement, however, was not found with employed older adults (Potočnik & Sonnentag, 2013).

Interdependence Adaptive Mode

The interdependence adaptive mode of the RAM has been characterized in the literature in various ways including social support, relationship changes, cultural considerations, and family and behavioral stressors. Within the interdependence adaptive mode, the quality and quantity of support received by a women's breast cancer support group was explored (Zeigler, Smith, & Fawcett, 2004). The effect of adolescent cancer on relationships between individuals was examined within the interdependence adaptive mode (Ramini et al., 2008). The RAM was utilized to organize interdependence stressors in first-time fathers, characterized as problems between family members during the early post-partum period (Pollock et al., 2005). In this study, explored areas within the interdependence adaptive mode included culture and social support in retired women.

Culture

Culture in terms of race and/or ethnicity is an essential factor associated with health outcomes in women's retirement in the United States due to its relationship with socioeconomic status (SES) (Rohwedder & Willis, 2009). In 2010, African-American (AA) women composed nine percent of women over 65 years in the US compared to

81% who were non-Hispanic white (United States Census Bureau, 2014). The category that included Asian, American Indian or Alaska Native, and Native Hawaiian and Other Pacific Islander comprised less than 4% of women in the US over the age of 65 years, while older women of Hispanic origin made up 6% of this population (United States Census Bureau, 2014). The percentage of retiring older women in the US does not vary greatly between race/ethnicity. After age 55, however, Hispanic females are more likely than non-Hispanic white females to be retired (NIA, 2015).

There is limited research on the role of culture, specifically race and ethnicity, on health outcomes of older women during retirement. Medicare plays a significant role in the health care of older women (Richardson, 1999). Compared to 12% of older white women, more older black and Latina women had Medicare with Medicaid coverage (dual eligibility) in 2009 (38% and 40%, respectively) (Centers for Medicare and Medicaid Services [CMS], 2012). Individuals who are dually eligible were poorer, had poorer health, and required more complex health care than the general population (CMS, 2012). Black and Hispanic women were reported more likely to be caregivers for parents, grandchildren, or a spouse during retirement than white women (Groeneman & Pope, 2008). One study found no significant differences between older white and black retired women in their experiences of continued attachment to work following retirement (Pienta, Burr, & Mutchler, 1994). One qualitative study using semi-structured interviews reported that black female retirees were more involved with their families following retirement compared with white female retirees (Silverman, Skirboll, & Payne, 1996). This study also revealed that, compared to white women, a greater number of black

women returned to the labor force after retirement as with the trend of “unretirement” (Silverman, Skirboll, & Payne, 1996).

There is limited research with the population of retired Hispanic women living in the United States, despite the overall growing Hispanic population in this country. When comparing women of different ethnicities, women emigrating from Mexico were the least likely to have paid employment compared to non-Hispanics and African-Americans (Wallace & Castañeda, 2010). Hispanic women frequently worked in occupations that do not allow them to receive employee benefits (United States Census Bureau, 2014). The lack of employee benefits may have lasting effects into old age that may negatively affect health, such as impeding access to healthcare (Wallace & Castañeda, 2010).

Social Support

The social nature of women is well-documented. Perhaps this ability to relate to others has assisted women with necessary adaptations to various situations (Bengston, Burgess, & Parrot, 1997; Janowski et al., 2012). Retirement often changes the social environment of women. This alteration in women’s situations may have important implications for health. Social circles including friends have been found to be key social factors influencing positive health outcomes in women’s retirement including mental health, cardiovascular disease, and cognition (Price & Dean, 2009).

Marital status has been found to greatly influence the transitional process of retirement. Retirees who reported happy marriages adjusted to retirement better than those who reported their marriages as unhappy (Szinovacz & Davey, 2005; Wang, 2007). Older age, being white, having higher income, having greater retirement wealth, and

looking forward to retirement has predicted greater anticipatory socialization by married older adults (Curl & Ingram, 2012). Other results from this same study showed that for participating wives only, having a health problem that limited work, having higher spouse occupational status, and having a spouse who was looking forward to retirement were predictors to greater socialization due to anticipation of the process.

Older women are reported to live alone more often than men and have increased social support needs during the retirement years, further isolating and increasing the risk for depression (West, Cole, Goodkind, & He, 2014). The loss of a partner during retirement by death or divorce was negatively related to retirement satisfaction in older adults (van Solinge & Henkens, 2008). Retirees who were married adapted to retirement better than widowed or single retirees (Pinquart & Schindler, 2007). Timing of spousal retirement was found to be influential in the timing of women's retirement (Nahum-Shani & Bamberger, 2011). Retirees who have fewer dependent children were more likely to adjust well to retirement compared to those with a greater number of dependent children (Kim & Feldman, 2000; Marshall et al., 2001).

Summary of the Literature Review

Women's retirement is a fairly recent phenomenon within the last three decades. Women spend less time in the workforce and that time is often discontinuous due to greater caregiving responsibilities compared to men. This discontinuity of employment results in lower financial resources for women during retirement. Gender differences in retirement planning were revealed with women giving higher consideration for family and social issues more often than men (Griffin & Loe, 2012). There is a lack of women's

health and retirement research, and studies that have been conducted have reported contradictory findings in some health outcomes, particularly with respect to physical function, functional status, and HRQOL.

The literature suggests that certain health outcomes in women during retirement may be altered from those pre-retirement. Physical health condition findings of increased risks of cardiovascular disease and cancer diagnosis in women following retirement, after adjusting for known confounders, is important for clinicians to consider when making recommendations. Cardiovascular health may be reduced due to an increase in blood pressure and weight gain in women, but not men, during retirement. Retirement is related to lower self-rated health in both women and men. Women's mental health appears to improve following retirement. Education has a protective effect on the cognitive health of both women and men as individuals who performed more complicated mental tasks prior to retiring had less cognitive loss during retirement. Engagement in productive activities such as volunteering and leisure activities improve the health outcomes of older women, while caregiving appears to result in reduced health. Culture and social support influence retirement decision-making that impacts health care decisions. Increased social support from family and friends during retirement adjustment positively influences the retirement transition for women.

Current Knowledge of Gaps and Limitations

Studies on health during retirement compare outcomes in both men and women. Early studies on retirement considered men's experiences and health outcomes, as only men had traditionally worked outside of the home. Most of the literature is based on this

male model and does not consider the different family expectations that help shape the working lives of women. There is limited literature exploring health outcomes in the female retiree population.

There is non-standardization in the definition of retirement, making it difficult to examine differences between results. The social structure of retirement varies greatly both within and between countries. With the downturn in the economy both worldwide and in the United States, many older adults have found themselves unexpectedly unemployed and forced to retire. There is limited research and knowledge regarding how retirement type impacts long-term health outcomes. Likewise, there is limited research regarding the length and timing of retirement and health outcomes in women. Conflicting results on women's health outcomes and retirement exist in many components of health in the literature. Clarification is needed in these areas. This study contributes to knowledge in health research with women during retirement.

Chapter Summary

Women are now integrated into the workforce and many are transitioning to the necessary adjustments of retirement. Previous study findings indicate that women face some differing health outcomes from men during retirement. These variations may be related to the lower socioeconomic status of women during retirement and differing social expectations compared to that of men. Women leave the workforce more often and longer than men for the caregiving needs of the family. Retirement has some negative and some positive associations with health and well-being in women. While women's

mental health may improve in retirement, likely due to reduced stressors, how and when one retires appears to influence other outcomes, such as cognitive ability.

Many studies compared health conditions and indicators pre-retirement and post-retirement but the literature findings are inconclusive among health outcomes. As the population of retired women in the United States increases, so does the need for a better understanding of the circumstances of this adjustment period. This study explored the role of aspects of women's retirement in important health outcomes during later life.

CHAPTER III

METHODOLOGY

Design

This study followed a descriptive, correlational design to explore women's health outcomes during retirement using cross-sectional methodology. The cross-sectional design allowed for comparisons of several different variables among population groups (Polit & Beck, 2013). Examination of multiple health outcome variables aided in developing a broad understanding of women's health as adaptations to retirement and helped determine necessary supportive services and policies. Given the high number of chronic illnesses and related functional decline in older women, predictive measures are needed to assist with positive health outcomes in this population. Multiple health measures were explored for associations with aspects of women's retirement (status, type, and timing).

In this study, retirement status was operationalized as retired part-time (working 20 hours or less per week outside the home for pay) or retired full-time (not working outside the home for pay). Retirement type in this study was measured as voluntary (left on one's own volition) or forced (laid off; fired; pressured to retire). Retirement timing denotes one's age when one leaves the labor force and was operationalized in this study as early (prior to age 65) or on-time (at or after age 65). Differences in health outcomes among groups of retired women were examined. Open-ended questions were included in

the health and data questionnaire to allow the women an opportunity to describe their personal experiences and feelings about their own retirements.

Setting and Sample

Eighty women 55 years of age and older were recruited for this study. Study participants were selected from women who had retired either part-time or full-time within the last decade. In the literature, much of the health changes during retirement occurred within the first ten years of retirement (Gall, Evans, & Howard, 1997; NIA, 2015; Zantinge, van den Berg, Smit, & Picavet, 2013). Study participants were selected using convenience sampling from the community, including retirement communities, senior centers, church communities, and social organizations. Selected participants resided within five southeastern states of the United States (North Carolina, Georgia, Arkansas, Louisiana, and Florida).

Inclusion criteria for this study included:

- Being female
- Aged 55 years and older
- Retired part-time or full-time from working outside the home or from a home-based business within the last 10 years
- Able to read and speak English
- Oriented to time, place and person

Exclusion criteria for this study included:

- Living in a nursing home, group home, or institution

Recruitment

Participants were either recruited directly through personal contact by the investigator or through contacts with representatives of churches or senior centers who agreed to assist with recruitment of study participants. Prior to recruitment, permission was obtained from churches and senior centers. Institutional Review Board-approved flyers were posted in areas designated by representatives of those sites. Announcements of the study were given using IRB-approved scripts in social club meetings, announcements at churches, senior centers, and retirement community gatherings. Flyers were distributed at meetings and posted on bulletin boards. Social networking and social nomination were utilized for recruiting study participants by giving business cards/flyers to individuals that knew of others interested in participating. The receiver of the business card then contacted the PI by phone for more information. The investigator did not accept directly identifiable information of potential participants from other persons.

Data Collection

Data were collected between scheduled classes and meetings, throughout the day as participants were available, and at other times scheduled by potential participants. Churches, public libraries, and homes were used for data collection. The voluntary consent form was either read to individuals or they were given the choice to read it themselves with research staff present. Waiver of written consent was approved by the IRB. Study participants were given an unsigned voluntary consent copy. Participants self-administered the tools unless they requested investigator administration for visual or literacy concerns. The researcher was present in the same room as participants to answer

questions and assist participants while the health, demographic and other tool forms were completed. At both individual and group sessions, the investigator distributed all consent forms to participants and was present for all data collection sessions. The women used 20-30 minutes to review the consent and complete study forms. Light refreshments were available for study participants. Store card (\$10) incentives were provided to any participant that completed this study.

Protection of Human Subjects

Approval for the conduction of this study was obtained from the University of North Carolina at Greensboro's Institutional Review Board. Individuals were provided a printed voluntary consent form in simple language, at an approximately sixth to eighth grade reading level. The principal investigator (PI) distributed voluntary consent to participants individually. Embarrassment is infrequent but does occur when discussing one's health. Embarrassment was minimized by using a private area during voluntary consent and administration of the health and demographic form. Breaks were taken as needed by participants. The PI was a Masters prepared Registered Nurse with more than five years' experience dealing with persons while discussing personal health issues. Risk for breach of confidentiality was anticipated to be rare. All participant testing and study materials were coded with a unique random ID number and there was no linkage of responses to identify participants. Paper coded data was stored in a locked container at the PI's private residence and data was entered into a password protected and firewalled personal computer at the principal investigator's home. All data was reported as grouped data.

Measurement

Self-reported information about health and health-related behaviors were obtained from participants. Demographics including age, race/ethnicity, marital status, caregiver status, educational level, weight, height, and zip code were collected from study participants. Questions and instruments that were used to operationalize conceptual indicators for all of the RAM adaptive modes can be found in Table 1.

Physical function included the ability to perform activities such as bathing, dressing, grooming, eating, transferring, maintaining continence, and toileting. These activities impact the ability to participate in virtually all activities in later life, affecting a woman's choices (LaPlante, 2010). Conceptual indicators within the RAM's physiological adaptive mode used in this study were physical function and health conditions. Physical function was operationalized in this study using questions regarding participant's basic activities of daily living (ADLs).

The Katz Index of Independence in Activities of Daily Living (ADLs) was used in this study to measure study participants' ability to perform these basic levels of activity (Katz, Down, Cash, & Grotz, 1970). This instrument has been effectively utilized with older adults in multiple care settings, including those residing in communities. The instrument is well-known and has been widely used to measure physical function in older adults for the past four decades (LaPlante, 2010; Shelkey & Wallace, 2012).

The Katz Index of Independence in Activities of Daily Living assesses physical function in six areas including bathing, dressing, toileting, transferring, continence, and

feeding. Individuals are scored as yes or no for independence in physical function areas within the instrument. Participants in this study answered questions regarding independence within five of the physical functioning areas: bathing, dressing, toileting, transferring, and feeding. Each question was worth one point for higher independence in that area. A current Katz total ADL score was calculated by summing all questions for each participant. Higher scores indicated higher independence. Participants were then asked if they required any more help since retiring with any of the five areas (bathing, dressing, toileting, transferring, and feeding). Each question was worth one point for higher independence in that area. A current Katz total ADL score was calculated by summing all questions for each participant. Higher scores indicated higher independence since retiring.

The presence of one or more health condition in older adults affects other aspects of life during the later years (Wang, 2013). Health conditions will be operationalized in this study by questions regarding CVD, hypertension, stroke, myocardial infarction, diabetes, skin cancer, any cancer other than skin, depression, kidney impairment, arthritis, peripheral vascular disease, chronic lung disease, and cognitive/memory impairment. Health condition questions were obtained from the Behavioral Risk Factor Surveillance System (BRFSS) directed by the Centers for Disease Control and Prevention within the public domain (CDC, 2015c). Participants were asked the yes/no question whether they were “partially or totally incontinent of bowel or bladder?” as a separate question.

The self-concept adaptive mode includes the conceptual indicators of self-rated health and health-related quality of life (HRQOL). Due to increased longevity in women, health care researchers explore health and well-being in a way that differs from the traditional disease cause- and-treatment modality. Self-rated health and subjective measures of well-being have been reported to influence and be influenced by physical and psychological health (Wang, 2007). From the perspective of both the developmental adaption model and successful aging model, subjective well-being in older adults is directly impacted by physical health impairment (Cho, Martin, & Poon, 2015).

Self-rated health was operationalized in this study by a Visual Analog Scale (VAS) and questions related to self-assessed health. A Visual Analogue Scale (VAS) was a measurement tool that measured a characteristic, belief, or attitude that spans across a continuum. The VAS was a 100 mm horizontal line with picture or words on each end that describe the desired characteristic to be measured (Bijur, Silver, & Galagher, 2001). The respondent marked the line where they believe best represents their current state regarding the characteristic, belief, or attitude. The VAS has been predominantly used in research and clinical practice for the purpose of pain assessment (Hawker, Mian, Kendzerska, & French, 2011). As a measure of pain, the VAS has been found to be reliable in assessing acute pain in the emergency department setting (Bijur, Silver, & Galagher, 2001). Reliability of the VAS for pain has been shown to be higher among those with higher levels of literacy (Hawker, Mian, Kendzerska, & French, 2011). Validity of the instrument in measuring pain has been determined to be highly

correlated with a 5-point verbal descriptive scale of pain severity (Hawker, Mian, Kendzerska, & French, 2011).

As a measure of self-rated health, the VAS has been shown to be useful in predicting risk factors for patients with diabetes (Hayes et al., 2008). The VAS has a simple design yet the tool has been shown to provide reasonable measures of subjective phenomena, such as self-assessed health (Krabbe et al., 2011). In this study, participants were asked to place a mark on a 100 mm VAS where they rated their health before retirement. Participants were then asked to place a mark on a 100 mm VAS where they rated their current post-retirement health. Possible scoring was from 0 to 100, with higher ratings indicating better self-rated health.

Operational indicators of HRQOL in this study were quality of life and CDC-defined healthy days. Quality of life was operationalized in this study by the Quality of Life Index (QLI) Generic III Version, Psychological/Spiritual Subscale (Ferrans & Powers, 1985). The QLI is a copyrighted tool, however it is available for use in non-profit research without permission and at no charge (Ferrans, 2015). The QLI measures both satisfaction with and importance of various aspects of life on a 1-6 scale, with lower scores equating to greater levels of satisfaction. The Psychological/Spiritual Subscale contains 7 items from the Generic III Version. The questions were then weighted with responses to how important these same family factors were to them. The resulting scores were then standard-scored (using z-scoring). Validity of the overall Generic III Version has been moderately established (Ferrans, 2015). Reliability of the QLI has been established from the results of twenty-four studies, with alphas ranging from 0.78 to 0.96

for the psychological/ spiritual subscale (Ferrans, 2015). For this study, the Generic III Version Psychological/ Spiritual Subscale showed good reliability (7 items, $\alpha = 0.89$).

Healthy days is a practical way to help examine the association of overall health with self-perceived health for an individual (Healthy People 2020, 2015a). Healthy days was operationalized in this study questions from the CDC's Healthy Days Core Module found within the public domain. As an operationalized measure of self-rated health, participants were asked whether participants reported their current status as excellent, very good, good, fair, or poor. As a question of self-rated health, participants were additionally asked "How would you rate your health compared to other people your age." Responses to both of these self-rating questions were then dichotomized as being either excellent to good or fair to poor for purposes of analysis.

Study participants were asked three questions (HRQOL-3) that inquire whether physical or mental problems have affected their health within the last 30 days. The CDC states that the "standard way of making comparisons using these variables would be to calculate the mean number of physically unhealthy days, mentally unhealthy days, and unhealthy days for both groups and use an independent sample to test and assess any statistically significant differences in these measures between the two groups" (Centers for Disease Control and Prevention, 2013b). Each question contained a possible response range of 0-30 days. The number of unhealthy days reported for each of the three questions were summed, representing HRQOL-3. The response range for HRQOL-3 was 0 to 90 days. The score means were calculated and compared between retirement groups

(status, type, and timing), with higher scores indicating more unhealthy days and worse HRQOL.

Conceptual indicators within the RAM's role function adaptive mode used in this study were functional status and activity engagement. Functional ability is a priority for aging adults, as it is closely associated with independence (Tabloski, 2006). Independent Activities of Daily Living include being able to use the telephone, go shopping, prepare food, perform housekeeping tasks and do laundry, travel independently via car or other mode, manage medications, and handle personal finances (Graf, 2008). These activities are more complex than physical functionality as measured by ADLs and thus require a higher level of overall functionality (Graf, 2008). Functional status was measured in this study using the Duke Older Americans Resources and Services (OARS) Instrumental ADL Module (Duke University Center for the Study of Aging and Human Development, 1975). The instrument is a copyrighted instrument and permission was obtained for the use of this tool in this study after submitting the requested fee and receiving the instrument from Duke University (OARS) by electronic mail.

Questions from the Duke OARS have been included in the EASY-care assessment modules for use with community-dwelling individuals (Craig, Chadborn, Sands, Tuomainen, & Gladman, 2015). The Duke OARs Instrumental ADL Module has been used to predict cognitive recovery following heart surgery (Fontes et al., 2013). Reliability of the Duke OARs Instrumental ADL Module has been established with a Cronbach's alpha of .79 (Tullai-McGuinness, Madigan, & Fortinsky, 2009). Participants of this study were asked to respond to questions concerning these seven functional areas

for their current status. Each of the seven questions was scored from 0-2. Total current scoring was accomplished by adding points from each question, with higher scores indicating better function. Participants were then asked if any of the seven functional areas required more assistance since retiring, with possible yes/no responses.

Activity engagement was operationalized in this study by questions regarding volunteering and leisure activities such as participation in physical activity or exercise, social or sports clubs, religious organizations, or volunteer work within the last month. Higher scores in each of the areas of volunteer work, physical activity or exercise, social or sports clubs, religious organizations indicated greater activity engagement. The raw scores in each of these four activity areas showed non-normality and responses were recoded as yes or no responses to activity, with a “yes” response indicating one or more day of activity in that area within the last month. Responses to the question regarding caregiving was considered separately from other activities of engagement.

The RAM’s interdependence adaptive mode conceptual indicators in this study included culture and social support. Relationships with family and friends are instrumental to well-being for older women (Brody, 1985). For those looking for fulfillment in later life, feeling connected with friends and family has been reported to be of greater importance to older Americans than finances (National Council on Aging, 2013). Culture is associated with socioeconomic status in the United States and related to health outcomes in older adults (Rohwedder & Willis, 2009). Culture was operationalized in this study by five yes or no questions regarding the participant’s cultural identity and awareness and included whether participants: felt that their culture

was considered in their healthcare, required the help of someone else in their healthcare decisions, prepared/ate culturally-specific foods, and felt free to worship or express their religion or spirituality. Questions on culture were similar to those used in the BRFSS and NHANES. Participant responses of “yes” indicated higher cultural awareness and consideration.

Social support was considered from both family and friends in this study and measurements include support from both sources. Social support is important for women’s health due to the large number who are living alone and or at further risk for depression (CDC, 2013a). Supportive assistance from friends in later years has been reported to predict physical activity engagement in older women (Harvey & Alexander, 2012). Social support was operationalized in this study by the Quality of Life Index (QLI) Generic III Version, Family Subscale (Ferrans & Powers, 1985). The Family Subscale contains five items from the Generic III Version. Reliability of the QLI Family Subscale has been established as acceptably high from the results of nineteen studies, with Cronbach’s alphas ranging from 0.63 to 0.92 (Ferrans, 2015). The QLI measures both satisfaction with and importance of family aspects of life on a 1-6 scale, with higher scores equating to greater levels of social support. The questions were then weighted with responses to how important these same family factors were to them. The resulting scores were then standard-scored (using z-scoring). For this study, the Generic III Version-Family Subscale showed good reliability (5 items, $\alpha = 0.82$).

In addition, social support was measured through four yes/no questions regarding the participant’s support from family and friends before and after retirement. One

question was posed to participants “How often do you get the social and emotional support you need?” with the possible answer choices of: Always; Usually, Sometimes; Rarely; or Never. Responses to this question were recoded to two groups: Rarely to never (Rarely and never responses combined) and Always to sometimes (Always, Usually, or Sometimes responses combined). Questions were similar to those used in the BRFSS and NHANES. Participants were asked “How many days have you visited with friends or relatives during the last 30 days?” Possible responses for this question ranged from 0 to 30 days and means were calculated. The raw scores of responses to this question showed non-normality and responses were recoded as “yes, visited with friends/relatives during the last 30 days” if the response was 1 or more day, or “no, did not visit with friends/relatives during the last 30 days” if the response was 0 days.

One objective of this study was to examine the association between retirement status and contextual factors. Demographic categories to be considered in this study included age, BMI, educational level, marital status, race/ethnicity, caregiver status, and rural designation. Age was requested in years. Participant height (feet/inches) and weight (pounds) were requested and BMI was calculated using a CDC-recommended formula. Socioeconomic status (SES) is reported as related to many health outcomes in women (Mein, Higgs, Ferrie, & Stansfeld, 1998). Educational levels were requested from participants to help determine SES. Participants were asked their highest level of achieved education by the following categories: Did not graduate from high school, achieved a high school diploma or GED, attended some college, and achieved a four-year college degree or more education. Participants were asked to indicate their race/ethnicity

by the following categories: Asian, black/African American, white/Caucasian, Hispanic, Native American, or Other. Participants were asked to indicate their marital status with the possible responses: Single, Married, Divorced, or Widowed. Participants were asked the yes or no question whether they provided care for someone within the last month.

The categorical contextual variables of marital status, level of education, and race/ethnicity were recoded into dichotomous variables. Responses to marital status were recoded to two groups: Married (married only) and Not married (single, divorced, and widow responses combined). Level of education was recoded to two groups: Having less than a high school education (did not graduate from high school) and High school education or more (high school diploma [or GED], attended some college, and four year college or more responses combined). Race / ethnicity was recoded into two groups: White / Caucasian (only white/Caucasian) and All races other than White / Caucasian (Black/African-American, Hispanic, and Native American responses combined). Participants were asked their zip codes and rural or urban designation status was determined. For this study, a location was considered rural if it is situated outside Census Urban Areas with a population greater than or equal to 50,000 (United States Department of Agriculture, 2015).

Open-ended questions were included on the health and demographic form in order to allow the women a voice in sharing their perceptions of retirement with the researcher. Participants were given the opportunity to share any retirement experiences and disclose any unexpected occurrences during their retirements. Questions included:

“What are your thoughts about retirement now?” and “Anything else you would like to share about your retirement experience?”

Table 1

RAM Adaptive Modes, Conceptual Indicators, Operational Indicators, and Responses

RAM Adaptive Modes and Conceptual Indicators	Operational Indicators	Instruments and Demographic and Health Data Form Questions / Responses
Physiological Adaptive Mode Physical Function	Basic Activities of Daily Living (ADLs)	<ul style="list-style-type: none"> • Katz Index of Independence in Activities of Daily Living (ADLs) Questions on Bathing, Dressing, Toileting, Transferring, and Feeding Range 0-5 5 = High (patient independent) 0 = Low (patient very dependent) Since retiring, do you need more help with: Bathing, Dressing, Toileting, Transferring, and Feeding • Are you partially or totally incontinent of bowel or bladder? Yes; No

Table 1 (cont.)

RAM Adaptive Modes and Conceptual Indicators	Operational Indicators	Instruments and Demographic and Health Data Form Questions / Responses
Health Conditions	Cardiovascular Disease	<ul style="list-style-type: none"> • Has a doctor, nurse, or other health professional ever told you that you had chronic heart disease? Yes; No New since you retired? Yes; No • Has a doctor, nurse, or other health professional ever told you that you had heart attack, also called a myocardial infarction? Yes; No New since you retired? Yes; No • Has a doctor, nurse, or other health professional ever told you that you had a stroke? Yes; No New since you retired? Yes; No • Has a doctor, nurse, or other health professional ever told you that you had high blood pressure or hypertension? Yes; No New since you retired? Yes; No
	Peripheral Vascular Disease (PVD)	<ul style="list-style-type: none"> • Has a doctor, nurse, or other health professional ever told you that you had Peripheral Vascular Disease? Yes; No New since you retired? Yes; No
	Cancer	<ul style="list-style-type: none"> • Has a doctor, nurse, or other health professional ever told you that you had skin cancer? Yes; No New since you retired? Yes; No

Table 1 (cont.)

RAM Adaptive Modes and Conceptual Indicators	Operational Indicators	Instruments and Demographic and Health Data Form Questions / Responses
		<ul style="list-style-type: none"> Has a doctor, nurse, or other health professional ever told you that you had any other types of cancer? Yes; No; New since you retired? Yes; No
	Chronic Lung Disease	<ul style="list-style-type: none"> Has a doctor, nurse, or other health professional ever told you that you had chronic lung disease? Yes; No New since you retired? Yes; No
	Arthritis	<ul style="list-style-type: none"> Has a doctor, nurse, or other health professional ever told you that you had arthritis? Yes; No New since you retired? Yes; No
	Depression	<ul style="list-style-type: none"> Has a doctor, nurse, or other health professional ever told you that you have depression or depressive disorder? Yes; No New since you retired? Yes; No During the past 30 days, for about how many days have you felt sad, blue, or depressed? Number of days
	Diabetes	<ul style="list-style-type: none"> Has a doctor, nurse, or other health professional ever told you that you have diabetes? Yes; No New since you retired? Yes; No

Table 1 (cont.)

RAM Adaptive Modes and Conceptual Indicators	Operational Indicators	Instruments and Demographic and Health Data Form Questions / Responses
	Kidney Disease	<ul style="list-style-type: none"> • Has a doctor, nurse, or other health professional ever told you that you had kidney disease? Yes; No New since you retired? Yes; No
	Cognitive Impairment	<ul style="list-style-type: none"> • Has a doctor, nurse, or other health professional ever told you that you had memory impairment, cognitive impairment, or dementia? Yes; No New since you retired? Yes; No • (Before you retired) and (Since you retired) (Did/Do) you have serious difficulty concentrating, remembering, or making decisions? Yes; No • Everyone has some difficulty remembering at times. (Before you retired) and (Since you retired) has your memory loss ever scared you? Yes; No • (Before you retired) and (Since you retired) (Did/Do) you struggle to make simple decisions about everyday things? Yes; No • (Before you retired) and (Since you retired) has your memory caused everyday life to be difficult? Yes; No

Table 1 (cont.)

RAM Adaptive Modes and Conceptual Indicators	Operational Indicators	Instruments and Demographic and Health Data Form Questions / Responses
<p>Self-Concept Adaptive Mode</p> <p>Self-rated Health</p>	<p>Perceived health or Self-rated health</p>	<ul style="list-style-type: none"> • Visual Analog Scale (VAS) 100 mm (Before and after retirement) • Healthy Days Core Module Q1: Would you say that in general your health is: Excellent to good or Fair to poor? • How would you rate your health compared to other people your age? Excellent to good or Fair to poor?
<p>Health-related Quality of Life</p>	<p>Quality of Life</p>	<ul style="list-style-type: none"> • Quality of Life Index (QLI)-Generic III Version, Psychological/Spiritual Subscale Questions 27-33, 7 items <p>How satisfied are you with and how important to you is:</p> <p>27. Peace of mind? 28. Faith in God? 29. Achievement of personal goals? 30. Happiness in general? 31. Life satisfaction in general? 32. Personal appearance? 33. Self?</p> <p>Very satisfied (1 pt); Moderately satisfied (2 pts); Slightly satisfied (3 pts); Slightly dissatisfied (4 pts); Moderately dissatisfied (5 pts); Very dissatisfied (6 pts) (Results were Z-scored)</p>
	<p>Healthy Days</p>	<ul style="list-style-type: none"> • Healthy Days Core Module (CDC-HRQOL-3) Questions 2, 3, & 4

Table 1 (cont.)

RAM Adaptive Modes and Conceptual Indicators	Operational Indicators	Instruments and Demographic and Health Data Form Questions / Responses
Role Function Adaptive Mode Functional Status	Independent Activities of Daily Living (IADLs)	<p>Q2: Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good? Number of days</p> <p>Q3: Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good? Number of days</p> <p>Q4: During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation? Number of days</p> <p>Total of Q2+Q3+Q4 days summed.</p> <ul style="list-style-type: none"> • Duke Older Americans Resources and Services (OARS) <p>Instrumental ADL Module: Questions 56-62 (7 items) Current status and do you need MORE help since you retired?</p> <p>56. Can you use the telephone? Without help With some help Completely unable to use the telephone</p> <p>57. Can you get to places out of walking</p>

Table 1 (cont.)

RAM Adaptive Modes and Conceptual Indicators	Operational Indicators	Instruments and Demographic and Health Data Form Questions / Responses
		<p>distance? Without help With some help Unable to travel unless emergency arrangements are made for a specialized vehicle like an ambulance</p> <p>58. Can you go shopping for groceries or clothes? Without help With some help Completely unable to do any shopping</p> <p>59. Can you prepare your own meals? Without help With some help Completely unable to prepare any meals</p> <p>60. Can you do your housework? Without help With some help Completely unable to do any housework</p> <p>61. Can you take your own medicine? Without help With some help Completely unable to take your medicines?</p> <p>62. Can you handle your own money? Without help With some help Completely unable to handle money</p>
Activity Engagement	Activities: Caregiving	<ul style="list-style-type: none"> Have you provided care for someone such as a parent, child, or grandchild within the last month? Yes; No

Table 1 (cont.)

RAM Adaptive Modes and Conceptual Indicators	Operational Indicators	Instruments and Demographic and Health Data Form Questions / Responses
	Volunteering	<ul style="list-style-type: none"> • Have you participated in voluntary activities in the community within the last month? Yes; No
	Leisure Activities	<ul style="list-style-type: none"> • During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise? Yes; No • Have you participated in a social or sports club within the last month? Yes; No • Have you been involved in activities with a religious or spiritual organization within the last month? Yes; No
Interdependence Adaptive Mode		
Social Support	Family/ friend relationships	<ul style="list-style-type: none"> • Quality of Life Index (QLI)-Generic III Version, Family Subscale -5 items Questions 8, 9, 10, 12, 14 How satisfied are you with and how important to you is: 8. Family health 9. Children

Table 1 (cont.)

RAM Adaptive Modes and Conceptual Indicators	Operational Indicators	Instruments and Demographic and Health Data Form Questions / Responses
		<p>10. Family happiness 12. Spouse, lover, or partner 14. Emotional support from family</p> <p>Very satisfied (1 pt); Moderately satisfied (2 pts); Slightly satisfied (3 pts); Slightly dissatisfied (4 pts); Moderately dissatisfied (5 pts); Very dissatisfied (6 pts) (Results were Z-scored)</p>
		<ul style="list-style-type: none"> • How often do you get the social and emotional support you need? Always to sometimes or Rarely to never • Have you visited with friends or relatives during the preceding 30 days Yes; No • Before/Since I retired, I have close friends for emotional support? True; False
	Living arrangement	<ul style="list-style-type: none"> • Do you live alone? Yes; No
Culture	Cultural Awareness and Consideration	<ul style="list-style-type: none"> • Do you feel that your culture is adequately considered by your healthcare providers? Yes; No • Is there someone else in your life that needs to be involved in making important medical

Table 1 (cont.)

RAM Adaptive Modes and Conceptual Indicators	Operational Indicators	Instruments and Demographic and Health Data Form Questions / Responses
		decisions about your care? Yes; No
		<ul style="list-style-type: none"> • Are you aware of medical practices and treatment that may be specific to your culture? Yes; No
		<ul style="list-style-type: none"> • Do you regularly prepare and eat foods specific to your culture? Yes; No
		<ul style="list-style-type: none"> • Are you able to freely worship or express yourself religiously or spiritually? Yes; No

Power Analysis

For continuous variables, F-tests (one-way variance of analysis) were used in the estimate anticipating a medium effect size of 0.15 at a significance level of $p \leq .05$ with 4 predictors and a power of 80%. For categorical variables, Chi square tests were used in the estimate anticipating a medium effect size of 0.3 at a significance level of $p \leq .05$ and a power of 80% using G*Power 3.1.9.2 analysis.

Data Analysis

All analyses were performed with SPSS for Windows version 23.0 (SPSS, Chicago, IL). Descriptive statistics were calculated and used to describe the sample of

women. Measures of central tendency including mean, standard deviation, and kurtosis were computed for continuous variables: age (years), age of retirement (years), length of retirement (years), weight (pounds), height (feet/inches), BMI (kg/m²), Katz ADLs (points), VAS current (points), VAS after retirement (points), QLI-Psychosocial/Spiritual Subscale scores (points), QLI-Family Subscale scores (points), and Duke OARS (points). For categorical or nominal level variables, proportions and frequencies were calculated: race/ethnicity, marital status, caregiver status, educational level, and rural designation as determined from zip codes, and dichotomous variables within the four RAM adaptive modes. Written responses to the open-ended questions were analyzed using standard content analysis and frequency counts.

For each study research question, the following data analysis was performed:

- 1. What aspects of women's retirement (status, type, and timing) are related to the contextual factors?**

Associations between the categorical variables (marital status, educational level, race/ethnicity, caregiver status, and rural designation) and aspects of retirement (type, timing, and status) were determined using the Chi-square test with a statistical significance level of .05. All continuous variables were analyzed using the General Linear Model Univariate Analysis of Variance (ANOVA). Associations between the continuous variables (age and BMI as calculated from self-reported height and weight) and aspects of retirement (type, timing, and status) were determined using ANOVA, controlling for age, with a statistical significance level of .05.

2. What retirement aspects (status, type, and timing) are associated with differences in physiological adaptations during women's retirement?

Categorical variables (health conditions) were scored as a yes/no response for each health condition. A Chi-square test or Fisher's exact test was used to determine the difference in the proportion of women grouped by retirement type, timing, or status and categorized by the presence or absence of selected health conditions. ADL scores were calculated from participant responses to the Katz Index of Independence in Activities of Daily Living (ADLs) at current levels and levels since retiring to reflect retirement group score means. The independent variable (retirement status, type, or timing) differences for ADLs means was compared using ANOVA, controlling for age. A two-sided p -value $< .05$ was considered statistically significant.

3. What retirement aspects (status, type, and timing) are associated with differences in self-concept adaptations during women's retirement?

A Chi-square test was used to determine the difference in the proportion of women grouped by aspects of retirement (status, type, and timing) and categorized by the degree of health as self-assessed by participants (excellent to good or fair to poor). Associations between VAS pre-retirement, VAS post-retirement, and HRQOL-3 scores and aspects of retirement (status, type, and timing) were determined using ANOVA, controlling for age. QLI Psychosocial/Spiritual Subscale mean scores were calculated for retirement groups and standard scored using z-scoring. The independent variable (retirement group) QLI Psychosocial/Spiritual Subscale means were compared using

ANOVA, controlling for age. A two-sided p -value $< .05$ was considered statistically significant.

4. What retirement aspects (status, type, and timing) are associated with differences in role function adaptations during women's retirement?

Categorical variables (activity engagement) were scored as a yes/no response. A Chi-square test or Fisher's exact test was used to determine differences in the proportion of women grouped by retirement type, timing, or status and categorized by the presence or absence of engagement in these activities. Duke OARS Instrumental ADL (IADL) mean scores were calculated for each retirement group. The independent variable (retirement group) IADL means were compared using non-parametric K-independent samples K-S tests. A two-sided p -value $< .05$ was considered statistically significant.

5. What retirement aspects (status, type, and timing) are associated with interdependence adaptations during women's retirement?

Categorical variables (family/friend support, living arrangement, and cultural awareness and consideration questions) was scored as a yes/no response for each operational indicator. A Chi-square test or Fisher's exact test was used to determine the differences in the proportion of women grouped by retirement type, timing, or status and categorized by the presence or absence of cultural awareness and consideration or social support. QLI Family Subscale mean scores were calculated for retirement groups and standard scored using z -scoring. The independent variable (retirement group) QLI Family Subscale means were compared using ANOVA, controlling for age. A two-sided p -value $< .05$ was considered statistically significant.

Content analysis of open-ended question responses followed descriptive data analysis (Colaizzi, 1978). Women's thoughts about retirement from a retrospective view offered insight into the preparedness of retirees for their retirement transition. Women's experiences and feelings regarding their personal retirement were requested in the hope that participants would have the opportunity to voice their unique input in their own words. This narrative data was extracted, organized, and analyzed to present a collective voice of women retirees.

Missing Data

Continuous variables were checked for outliers and normality in univariate analysis using boxplots, normal P-P plots, and Kolmogorov-Smirnov tests. Graphs and box plots were used to determine outliers or missing values. Data was entered into the Statistical Package for the Social Science version 23.0 (SPSS v. 23) (SPSS Inc., Chicago, IL). Statistical significance was set at $p = .05$. Data were double entered with less than a 1% data entry error rate. The pattern of missing values was assessed and examined. In collected data with outliers, analysis was run with and without the outliers. The analysis results did not change, thus outliers were retained.

Chapter Summary

A descriptive, correlational, and cross-sectional study was conducted to explore women's health outcomes during retirement. A convenience sample of 80 retired women recruited from communities within five states (North Carolina, Georgia, Arkansas, Louisiana, and Florida) was used. The Roy's Adaptation Model of Nursing was used to guide this study, with measured health outcomes organized within each of the conceptual

framework's four adaptive modes. Following informed consent, a Demographic and Health data form was administered to participants that met inclusion criteria. This form included questions from six different instruments as well as other questions similar to those used in the BRFSS and NHANES. Data analyses included descriptive statistics, Chi-square, Fisher's exact, and ANOVA comparisons of retirement group health outcome means.

CHAPTER IV

RESULTS

The findings of this study, guided by the Roy's Adaptation Model, are reported in this chapter. A description of the participants is provided followed by analysis for each research question. A chapter summary is included.

Sample

Study participants included eighty women ranging from 55 to 81 years of age with a mean of 66.56 years, who had retired full-time or part-time within the past 10 years (see Table 2). The majority of participants were white. However, minority women comprised nearly 25% of the study participants. Many participants were married and lived with someone. The level of participant education varied with having a four year college degree or more education (36.3%), attending some college (25%), not graduating from high school (21.3%), and attaining a high school diploma or GED (17.5%). Participant BMI ranged from 17.16 to 49.59 kg/m² with an average of 27.51 kg/m². The majority of participants lived in rural areas (93.8%) as determined by participant zip code and Census Bureau definitions. Many study participants were caregivers (38.7%). Results are presented in Table 3.

Table 2

Socio-demographic Characteristics (Continuous) of Participants

<u>Characteristic (n= 80)</u>	<u>Mean \pm Standard deviation (SD)</u>
Age (years)	66.56 \pm 5.73
Age of Retirement (years)	62.40 \pm 4.44
Length of Retirement (years)	4.16 \pm 2.83
BMI (kg/m ²)	27.51 \pm 5.33

The age of retirement for all participants ranged from 50 to 72 years of age with an average age of 62.4 years. Length of retirement ranged from less than a year to 10 years with an average retirement length of 4.16 years. The majority of participants were retired full-time (71.2%) and had retired voluntarily (72.5%). Of the women who had retired part-time and were still working, 10% had worked full-time in the past and were now doing a different type of work than when working full-time. More women had retired early (60%), prior to reaching the age of 65 years compared to those who retired on-time at age 65 years or older. Participants reported job-related reasons (25%) most often as the main reason for retiring, followed by age (20%), other (17.5%), family (15%), health/medical (12.5%), and lifestyle (10%) factors. Job-related reasons reported by participants include “being laid off” or “fired”. Main reasons for retirement in the “other” category were reported by participants as being related to health concerns, wanting to spend more time with family, and having more free time. Additional reasons for retirement reported by participants include: needing to care for another, having a retiring or retired spouse, and being ready or of age to retire.

Table 3

Socio-demographic Characteristics (Categorical) of Participants

<u>Characteristic (n= 80)</u>	<u>n (%)</u>
Race/Ethnicity	
White/Caucasian	61 (76.3)
Black/African-American	15 (18.8)
Hispanic	2 (2.5)
Native American	2 (2.5)
Marital status	
Single	1 (1.3)
Married	49 (61.3)
Divorced	15 (18.8)
Widowed	15 (18.8)
Level of Education	
Did not graduate from high school	17 (21.3)
High school diploma (or GED)	14 (17.5)
Attended some college	20 (25.0)
Four year college or more	29 (36.3)
Caregiver status	
Caregiver	31 (38.8)
Not a caregiver	49 (61.3)
Rural Status	
Urban	5 (6.3)
Rural	75 (93.8)
Retirement status	
Retired, but working part-time	23 (28.8)
Retired full-time	57 (71.2)
Retirement timing	
Retired early (< 64 years)	48 (60)
Retired on-time (≥ 65 years)	32 (40)
Retirement type	
Retired voluntarily	58 (72.5)
Forced to retire	22 (27.5)

Note: Percentages may not equal 100% due to rounding and missing values.

Participants were asked if they currently had any of thirteen reported health conditions and whether any of these conditions were new to them since they retired. The most frequently reported health conditions by participants were hypertension (57.5 %),

arthritis (53.8 %), and diabetes (26.3 %). The top three current health conditions most frequently reported since retiring were arthritis (20%), hypertension (15%), and diabetes (10%). Additionally, women reported the number of days that they felt blue, sad, or depressed during the last 30 days, with a reported average of nearly 4 days per month. Present health conditions and changes in health conditions since retirement are described in Table 4.

Table 4
Sample Health Status Before and After Retirement

<u>Health Conditions (n=80)</u>	<u>Yes n (%)</u>	<u>No n (%)</u>	<u>New Condition Since Retiring? n (%)</u>
Chronic Heart Disease	10 (12.5)	70 (87.5)	5 (6.3)
Heart Attack (MI)	5 (6.3)	75 (93.8)	3 (3.8)
Hypertension	38 (47.5)	42 (52.5)	12 (15)
Stroke	2 (2.5)	78 (97.5)	1 (1.3)
Diabetes	21 (26.3)	59 (73.8)	8 (10)
Skin Cancer	12 (15)	68 (85)	7 (8.8)
Any Cancer, other than skin cancer	13 (16.3)	67 (83.8)	7 (8.8)
Depression	10 (12.5)	70 (87.5)	4 (5)
Arthritis	43 (53.8)	37 (46.3)	16 (20)
Peripheral Vascular Disease	9 (11.3)	71 (88.8)	6 (7.5)
Chronic Lung Disease	2 (2.5)	78 (97.5)	0 (0)
Kidney Disease	2 (2.5)	78 (97.5)	1 (1.3)
Cognitive/Memory Impairment	4 (5)	76 (95)	4 (5)

Note: Percentages may not equal 100% due to rounding and missing values.

Participants were asked questions regarding their culture and current social support status in retirement. A greater number of women reported having close friends or

relatives before retiring (92.5%) compared to after retiring (78.8%). Social support and cultural variables of the study population are presented in Table 5.

Table 5

Description of Social Support and Culture Variables

<u>Social Support or Culture Variable (n=80)</u>	<u>No n (%)</u>	<u>Yes n (%)</u>
Gets Social and Emotional Support ^a	5 (6.3)	75 (93.8)
Visited with Friends/Relatives in last 30 days	2 (2.5)	77 (96.3)
Has Friends/Relatives for Emotional Support Before Retiring	6 (7.5)	74 (92.5)
Has Friends/Relatives for Emotional Support After Retiring	17 (21.3)	63 (78.8)
Lives Alone	24 (30)	56 (70)
Culture is Considered in Healthcare	10 (12.5)	70 (87.5)
Needs Involvement of Someone Else in Healthcare Decisions	27 (33.3)	53 (66.3)
Is Aware of Culturally-Specific Medical Practices	47 (58.8)	31 (38.8)
Prepares / Eats Culturally-Specific Foods	69 (86.3)	10 (12.5)
Free to Worship/Express of Religion or Spirituality	1 (1.3)	65 (97.5)

Note: Percentages may not equal 100% due to rounding and missing values.

^a No = Rarely to never; Yes = Always to sometimes

Analysis

Question #1: What aspects of women's retirement (status, type, and timing) are related to contextual factors?

Contextual Factors

The contextual factors of race/ethnicity, marital status, level of education, caregiver status, rural status, age, and BMI were considered for this analysis. Chi-square

analyses between the three retirement groups (retirement status, type, and timing) and race/ethnicity, marital, educational, caregiver, and rural status were completed. No significant differences in contextual factors were found between the part-time retired group and the full-time retired group. Results of the analysis for retirement status groups are reported in Table 6. The association of retirement type and race / ethnicity was found to be significant, with a greater proportion (63.2 %) of minority women being forced to retire compared to Caucasian women. Less than 17% of Caucasian women reported being forced to retire. Results of the analysis for retirement type groups are reported in Table 7. No significant differences in contextual factors were found between women that retired early and those that retired on-time. Results of the analysis for retirement timing groups are reported in Table 8.

Table 6

Contextual Factors by Retirement Status

	<u>Retirement Status (n=80)</u>				<u>χ^2</u>
	<u>Part-time</u>		<u>Full-time</u>		
	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	
Married	12 (52.2%)	11 (47.8%)	19 (33.3%)	38 (66.7%)	^a NS
High school education or more	7 (30.4%)	16 (69.6%)	10 (17.5%)	47 (82.5%)	NS
White/Caucasian	7 (30.4%)	16 (69.6%)	12 (21.1%)	45 (78.9%)	NS
Caregiver	12 (52.2%)	11 (47.8%)	37 (64.9%)	20 (35.1%)	NS
Rural	1 (4.3%)	22 (95.7%)	4 (7.0%)	53 (93.0%)	NS

Note: Percentages may not equal 100% due to rounding and missing values.

Note: Chi square analysis was run separately for contextual factors with retirement status.

^a NS = not significant

*Chi square significant at $p < .05$

Table 7

Contextual Factors by Retirement Type

	<u>Retirement Type (n=80)</u>				<u>χ²</u>
	<u>Voluntary</u>		<u>Forced</u>		
	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	
Married	19 (32.8%)	39 (67.2%)	12 (54.5%)	10 (45.5%)	^a NS
High school education or more	10 (17.2%)	48 (82.8%)	7 (31.8%)	15 (68.2%)	NS
White/Caucasian	51 (87.9%)	7 (12.1%)	12 (54.5%)	10 (45.5%)	*χ ² = 15.891
Caregiver	36 (62.1%)	22 (37.9%)	13 (59.1%)	9 (40.9%)	NS
Rural	4 (6.9%)	54 (93.1%)	1 (4.5%)	21 (95.5%)	NS

Note: Percentages may not equal 100% due to rounding and missing values.

Note: Chi square analysis was run separately for contextual factors with retirement type.

^a NS = not significant

*Chi square significant at $p < .05$

Table 8

Contextual Factors by Retirement Timing

	<u>Retirement Timing (n=80)</u>				<u>χ^2</u>
	<u>Early (≤ 64 years)</u>		<u>On-time (≥ 65 years)</u>		
	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	
Married	15 (31.3%)	33 (68.8%)	16 (50%)	16 (50%)	^a NS
High school education or more	12 (25%)	36 (75%)	5 (15.6%)	27 (84.4%)	NS
White/Caucasian	14 (29.2%)	34 (70.8%)	5 (15.6%)	27 (84.4%)	NS
Caregiver	29 (60.4%)	19 (39.6%)	20 (62.5%)	12 (37.5%)	NS
Rural	4 (8.3%)	44 (91.7%)	1 (3.1%)	31 (96.9%)	NS

Note: Percentages may not equal 100% due to rounding and missing values.

Note: Chi square analysis was run separately for contextual factors with retirement timing.

^a NS = not significant

*Chi square significant at $p < .05$

One-way ANOVA revealed differences in age between the three retirement groups, retirement status, retirement type, and retirement timing. Women who retired voluntarily and on-time were older compared to women who were forced to retire early prior to age 65 ($F = 25.946$, $df = 3$, $p < .01$). One-way ANOVA using age as a covariate in the model revealed no significant differences in BMI between the three retirement groups.

Responses to an open-ended question about weight change after retirement revealed that nearly half of the participants reported a change in weight following retiring (47.5 %). Of all participants that reported a weight change since retiring, the majority of

women stated that their weight had increased since retiring (63.2%). No statistical differences were found for weight increase or weight decrease between any of the retirement groups (status, type, and timing).

Question #2: What retirement aspects (status, type, and timing) are associated with differences in physiological adaptations during women's retirement?

Health Conditions

Study participants were asked whether a doctor, nurse, or other health professional had ever told them that they had specified health conditions. Thirteen health conditions reported by participants were examined for differences between retirement group (status, type, and timing) using Chi-square or Fisher's exact test analyses.

Retirement status was related to having diabetes, with a larger proportion of participants who were retired part-time but still working (47.8%), reporting diabetes compared to participants who had retired full-time ($\chi^2 = 7.762, p < .01$) Results of the analyses are reported in Table 9.

Table 9

Description of Health Conditions by Retirement Status

	<u>Retirement Status (n=80)</u>				<u>χ^2</u>
	<u>Part-time</u>		<u>Full-time</u>		
	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	
Chronic Heart Disease	21 (91.3%)	2 (8.7%)	49 (86.0%)	8 (14.0%)	^a NS
Heart Attack / Myocardial Infarction	23 (100%)	0 (0%)	52 (91.2%)	5 (8.8%)	NS
Hypertension	13 (56.5%)	10 (43.5%)	29 (50.9%)	28 (19.1%)	NS
Stroke	23 (100%)	0 (0%)	55 (96.5%)	2 (3.5%)	NS
Diabetes	12 (52.2%)	11 (47.8%)	47 (82.5%)	10 (17.5%)	* $\chi^2 = 7.762$
Skin Cancer	17 (73.9%)	6 (26.1%)	51 (89.5%)	6 (10.5%)	NS
Any Cancer, other than skin cancer	18 (78.3%)	5 (21.7%)	49 (86.0%)	8 (14.0%)	NS
Depression	20 (57.0%)	3 (13.0%)	50 (87.7%)	7 (12.3%)	NS
Arthritis	12 (52.2%)	11 (47.8%)	25 (43.9%)	32 (56.1%)	NS
Peripheral Vascular Disease	22 (95.7%)	1 (4.3%)	49 (86.0%)	8 (14.0%)	NS
Chronic Lung Disease	23 (100%)	0 (0%)	55 (96.5%)	2 (3.5%)	NS
Kidney Disease	23 (100%)	0 (0%)	55 (96.5%)	2 (3.5%)	NS
Cognitive/Memory Impairment	22 (95.7%)	1 (4.3%)	54 (94.7%)	3 (5.3%)	NS

Note: Percentages may not equal 100% due to rounding and missing values.

Note: Chi square or Fisher's exact analysis was run separately for health conditions with retirement status.

^a NS = not significant

*Chi square or Fisher's exact significant at $p < .05$

The relationship between retirement type and having experienced a stroke was significant, with a greater proportion (9.1%) of women who were forced to retire reporting having experienced a stroke compared to women who retired voluntarily. The association of retirement type and having diabetes was significant, with a greater proportion (50%) of forced retirees reporting diabetes compared to voluntary retirees. Retirement type was significantly related to self-report of cognitive/memory impairment, with a greater proportion (18.2%) of forced retirees compared to women who retired voluntarily reporting this impairment. There were similar patterns for reported arthritis for forced and voluntary retirees, with more than half of both groups having arthritis. Results are presented in Table 10.

Table 10

Description of Health Conditions by Retirement Type

	<u>Retirement Type (n=80)</u>				<u>χ^2</u>
	<u>Voluntary</u>		<u>Forced</u>		
	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	
Chronic Heart Disease	53 (91.4%)	5 (8.6%)	17 (77.3%)	5 (22.7%)	^a NS
Heart Attack / Myocardial Infarction	55 (94.8%)	3 (5.2%)	20 (90.9%)	2 (9.1%)	NS
Hypertension	28 (48.3%)	30 (51.7%)	14 (63.6%)	8 (36.4%)	NS
Stroke	58 (100%)	0 (0%)	20 (90.9%)	2 (9.1%)	* $p = .02$, ^b FET
Diabetes	48 (82.8%)	10 (17.2%)	11 (50%)	11 (50%)	* $\chi^2 = 8.841$
Skin Cancer	51 (87.9%)	7 (12.1%)	17 (77.3%)	5 (22.7%)	NS
Any Cancer, other than skin cancer	47 (81.0%)	11 (19.3%)	20 (90.1%)	2 (9.1%)	NS
Depression	53 (91.4%)	5 (8.6%)	17 (77.3%)	5 (22.7%)	NS
Arthritis	27 (46.6%)	31 (53.4%)	10 (45.5%)	12 (54.5%)	NS
Peripheral Vascular Disease	52 (89.7%)	6 (10.3%)	19 (86.4%)	3 (13.6%)	NS
Chronic Lung Disease	56 (96.6%)	2 (3.4%)	22 (100%)	0 (0%)	NS
Kidney Disease	57 (98.3%)	1 (1.7%)	21 (95.5%)	1 (4.5%)	NS
Cognitive/Memory Impairment	58 (100%)	0 (0%)	18 (81.8%)	4 (18.2%)	* $p < .01$, FET

Note: Percentages may not equal 100% due to rounding and missing values.

Note: Chi square or Fisher's exact analysis was run separately for health conditions with retirement type.

^a NS = not significant

^b FET = Fisher's exact test

*Chi square or Fisher's exact significant at $p < .05$

Two health conditions, chronic heart disease and arthritis, were related to retirement timing. The association of retirement timing and chronic heart disease was significant, with a greater proportion (18.8%) of women who retired early having chronic heart disease compared to women who retired on-time. Arthritis was significantly related

to the timing of retirement, with a higher percentage of women that retired on-time (68.8%) having arthritis compared to women who retired prior to age 65 years. Results are reported in Table 11.

Table 11

Description of Health Conditions by Retirement Timing

	<u>Retirement Timing (n=80)</u>				χ^2
	<u>Early</u>		<u>On-time</u>		
	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	
Chronic Heart Disease	39 (81.3%)	9 (18.8%)	31 (96.9%)	1 (3.1%)	* $p = .038$, ^a FET
Heart Attack / Myocardial Infarction	44 (91.7%)	4 (8.3%)	31 (96.9%)	1 (3.1%)	^b NS
Hypertension	24 (50%)	24 (50%)	18 (56.3%)	14 (43.8%)	NS
Stroke	46 (95.8%)	2 (4.2%)	32 (100%)	0 (0%)	NS
Diabetes	34 (70.8%)	14 (29.2%)	25 (78.1%)	7 (21.9%)	NS
Skin Cancer	42 (87.5%)	6 (12.5%)	26 (81.3%)	6 (18.8%)	NS
Any Cancer, other than skin cancer	40 (83.3%)	8 (16.7%)	27 (84.4%)	5 (15.6%)	NS
Depression	42 (87.5%)	6 (12.5%)	28 (87.5%)	4 (12.5%)	NS
Arthritis	27 (56.3%)	21 (43.8%)	10 (31.3%)	22 (68.8%)	* $\chi^2 = 4.82$
Peripheral Vascular Disease	44 (91.7%)	4 (8.3%)	27 (84.4%)	5 (15.6%)	NS
Chronic Lung Disease	46 (95.8%)	2 (4.2%)	32 (100%)	0 (0%)	NS
Kidney Disease	47 (97.9%)	1 (2.1%)	31 (96.9%)	1 (3.1%)	NS
Cognitive/Memory Impairment	45 (93.8%)	3 (6.3%)	31 (96.9%)	1 (3.1%)	NS

Note: Percentages may not equal 100% due to rounding and missing values.

Note: Chi square or Fisher's exact analysis was run separately for health conditions with retirement timing.

^aFET = Fisher's exact test

^bNS = not significant

*Chi square or Fisher's exact significant at $p < .05$

Participants were asked additional questions regarding cognitive or memory impairment, including: “Before you retired, did you have serious difficulty concentrating, remembering, or making decisions?” and “Since you retired, do you have serious difficulty concentrating, remembering, or making decisions?” A greater proportion of women forced to retire reported serious difficulty with memory after retiring, compared to women who retired voluntarily ($\chi^2 = 11.518, p < .01$). Early retirees were significantly more likely to report serious difficulty with memory after retiring compared to those who retired on-time ($\chi^2 = 4.675, p = .031$). The participants were asked the questions: “Before you retired, had your memory loss ever scared you?”, “Since you retired, has your memory loss ever scared you?” Voluntary retirees were significantly less likely to report that memory loss scared them after retiring compared to forced retirees ($\chi^2 = 5.897, p = .015$). Participants were asked: “Before you retired, did your memory cause everyday life to be difficult?” and “Since you retired, does your memory cause everyday life to be difficult?” Voluntary retirees were significantly less likely to report that memory loss caused everyday life to be difficult after retiring compared to forced retirees ($\chi^2 = 4.004, p = .045$). The participants were asked: “Before you retired, did you struggle to make simple decisions about everyday things?” and “Since you retired, do you struggle to make simple decisions about everyday things?” No differences were found among the retirement groups for these two questions.

Physical Function

More than a third of participants reported being partially or totally incontinent of bladder or bowel (33.8%). The relationship between retirement type and being partially

or totally incontinent of bladder or bowel was significant, with a greater proportion (54.5%) of women who were forced to retire compared to women who retired voluntarily experiencing bladder or bowl incontinence ($\chi^2 = 5.623, p = .018$). No associations were found between retirement timing and partial or total incontinence of bladder/bladder or retirement status and partial or total incontinence of bladder/bowel among these women.

The Katz Index of Independence in Activities of Daily Living (ADL) scores were calculated at current levels and since retirement (Katz, Down, Cash, & Grotz, 1970). The overall scores were obtained from point summation of five activities, ranging from needing no assistance (independent- 1 point) to needing full assistance (dependent – no points). Scored activities included: bathing, dressing, toileting, transferring, and feeding. Current scores ranged from 3 to 5 ($M = 4.95, SD = 0.27$). Since retiring scores ranged from 4 to 5 ($M = 4.98, SD = 0.16$). One-way ANOVA using age as a covariate in the model revealed no significant differences in either the current or since retiring ADL scores between the three retirement groups (status, type, and timing).

Question #3: What retirement aspects (status, type, and timing) are associated with differences in self-concept adaptations during women's retirement?

Self-Rated Health

Participants were asked two questions regarding self-rated health: “How would you rate your health?” and “How do you rate your health compared to others?” These self-rated variables were each grouped as rating either “excellent to good” or “fair to poor”. The majority of participants rated their health as excellent to good (83.3%) and rated their own health compared to others as excellent to good (80%). Retirement type

was significantly associated with self-rated health, with a greater proportion (76.9%) of forced retirees rating their health fair to poor compared to voluntary retirees ($\chi^2 = 19.017, p < .01$). Retirement type was significantly related to self-rated health compared to others, with a greater proportion (87.5%) of forced retirees rating their comparative health fair to poor compared to women who had voluntary retirees ($\chi^2 = 36.113, p < .01$).

Using a Visual Analog Scale (VAS), participants indicated where they rated their health before and then after their retirement. Pre-retirement scores for the VAS ranged from 5 to 100 ($M = 71.26, SD = 18.66$). Post-retirement scores for the VAS ranged from 1 to 100 ($M = 64.19, SD = 22.42$), lower than pre-retirement. One-way ANOVA revealed no significant differences in pre-retirement VAS scores between the three retirement groups (status, type, and timing). Forced retirees had significantly lower post-retirement health ratings ($M = 50.73, SD = 18.7$) compared to voluntary retirees ($M = 69.29, SD = 21.71$), ($F = 4.094, df = 4, p < .01$). There were no statistical differences between the post-retirement status and timing groups.

Health-Related Quality of Life

Participants were asked three questions (questions 2, 3, & 4) from the CDC-Healthy Days Core Module: “How many days during the past 30 days was your physical health not good?”, “How many days during the past 30 days was your mental health not good?”, and “How many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?” (Centers for Disease Control and Prevention, 2013b). Responses were scored as HRQOL-3, with scores ranging from 0 to 75 days per month when their physical and mental health was not good and kept

them from doing their usual activities ($M = 9.51$, $SD = 15.56$). HRQOL-3 had non-normal distribution and values were standard-scored using z-scoring. Both the resulting z-scored HRQOL-3 values and original non-z-scored HRQOL-3 values were examined using non-parametric testing (K-independent Sample Kolmogorov-Smirnov test) with the retirement groups (status, type, and timing). There were similarities in the results using the original non-z-scored HRQOL-3 and z-scored HRQOL-3 values. Therefore, the original non-z-scored HRQOL-3 was used for analysis. Forced retirees had significantly higher HRQOL-3 scores, indicating more unhealthy days ($M = 19.86$, $SD = 18.07$) compared to voluntary retirees ($M = 5.59$, $SD = 12.57$), ($F = 5.892$, $df = 4$, $p < .01$).

Participants were asked questions from the Quality of Life (QLI) Generic Version, Psychosocial / Spiritual subscale regarding how satisfied they were with psychosocial and spiritual aspects of their lives (Ferrans & Powers, 1985). The questions were then weighted with responses to how important these same psychosocial and spiritual aspects were to them. The resulting scores were then standard-scored (using z-scoring) with resulting scores ranging from -1.63 to 4.11 . Higher scores indicated lower satisfaction with life in psychosocial and spiritual areas. One-way ANOVA, using age as a covariate in the model, revealed that women who had forced retirement had significantly higher scores, and therefore lower satisfaction with the psychosocial and spiritual aspects of life compared to women who had retired voluntarily. Results of self-rated health and HRQOL variables are presented (see Table 12).

Table 12

Retirement Group (Status, Type, and Timing) Differences for Self-Concept Variables

<u>Self-Rated Health or Health-related Quality of Life Variable (n=80)</u>	<u>df</u>	<u>F</u>	<u>p-value</u>
VAS before retirement	4	2.078	.092
VAS after retirement	4	4.094	* < .01
CDC-HRQOL-3 (Days not healthy)	4	5.892	* < .01
QLI-Psychosocial/Spiritual Subscale	4	3.397	* .013

Note: Age included as a covariate in ANOVA models.

*Significant at $p < .05$

Question #4: What retirement aspects (status, type, and timing) are associated with differences in role function adaptations during women's retirement?

Activity Engagement

Participants were questioned regarding the number of days that they participated in different activities within the previous month. Participants engaged in voluntary activities in the community, with responses ranging from 0 to 30 days ($M = 3.19$, $SD = 5.52$). Participants were asked the following question: “During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise?” with responses ranging from 0 to 30 days ($M = 8.22$, $SD = 8.61$). Social and sports club activity engagement within the previous month was reported to range from 0 to 30 days ($M = 2.66$, $SD = 4.85$). Religious or spiritual organization activity engagement within the last month was reported by participants to be between 0 and 12 days ($M = 3.44$, $SD = 3.40$).

Part-time retirees were significantly less likely than full-time retirees to engage in volunteer activity ($\chi^2 = 4.943, p = .026$). There were similar patterns for physical activity for part-time and full-time retirees, with more than half of both groups reporting engagement in physical activity within the previous month. There were similar patterns for social activity for part-time and full-time retirees; slightly less than half of both groups reported social activity. Patterns of spiritual or religious activity were similar for part-time and full-time retirees; more than half of both groups reported religious or spiritual activity within the previous month (see Table 13.)

Table 13

Activity Differences by Retirement Status

	<u>Retirement Status (n=80)</u>				<u>χ^2</u>
	<u>Part-time</u>		<u>Full-time</u>		
	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	
Volunteer Activity	16 (69.6%)	7 (30.4%)	24 (51.1%)	33 (48.9%)	* $\chi^2 = 4.943$
Physical Activity	9 (39.1%)	14 (60.9%)	18 (31.6%)	39 (68.4%)	^a NS
Social Activity	13 (56.5%)	10 (43.5%)	31 (54.4%)	26 (45.6%)	NS
Religious or Spiritual Activity	7 (30.4%)	16 (69.6%)	21 (36.8%)	36 (63.2%)	NS

Note: Percentages may not equal 100% due to rounding and missing values.

Note: Chi square analysis was run separately for activity engagement variables with retirement status.

^aNS = not significant

*Chi square significant at $p < .05$

For retirement type, forced retirees were significantly less likely to engage in volunteer activity compared with voluntary retirees ($\chi^2 = 6.270$, $*p = .012$). Patterns of spiritual or religious activity were similar for forced and voluntary retirees. More than half of both retirement type groups reported religious or spiritual activity within the previous month (see Table 14.)

Table 14

Activity Differences by Retirement Type

	<u>Retirement Type (n=80)</u>				<u>χ^2</u>
	<u>Voluntary</u>		<u>Forced</u>		
	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	
Volunteer Activity	24 (41.4%)	34 (58.6%)	16 (72.7%)	6 (27.3%)	$*\chi^2 = 6.270$
Physical Activity	16 (27.6%)	42 (72.4%)	11 (50 %)	11 (50 %)	^a NS
Social Activity	29 (50 %)	29 (50 %)	15 (68.2%)	7 (31.8%)	NS
Religious or Spiritual Activity	20 (34.5%)	38 (65.5%)	8 (36.4%)	14 (63.6%)	NS

Note: Percentages may not equal 100% due to rounding and missing values.

Note: Chi square analysis was run separately for activity engagement variables with retirement type.

^a NS = not significant

*Chi square significant at $p < 0.05$

There were similar patterns for physical activity engagement for early and on-time retirees, with more than half of both groups reporting participation in physical activity within the previous month. Patterns of spiritual or religious activity were similar

for early and on-time retirees. More than half of both retirement timing groups reported religious or spiritual activity within the previous month (see Table 15).

Table 15

Activity Differences by Retirement Timing

	<u>Retirement Timing (n=80)</u>				<u>χ²</u>
	<u>Early</u>		<u>On-time</u>		
	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	
Volunteer Activity	25 (52.1%)	23 (47.9%)	15 (46.9%)	17 (53.1%)	^a NS
Physical Activity	15 (31.3%)	33 (68.8%)	12 (37.5%)	20 (62.5%)	NS
Social Activity	28 (58.3%)	20 (41.7%)	16 (50%)	16 (50%)	NS
Religious or Spiritual Activity	17 (35.4%)	31 (64.6%)	11 (34.4%)	21 (65.6%)	NS

Note: Percentages may not equal 100% due to rounding and missing values.

Note: Chi square analysis was run separately for activity engagement variables with retirement timing.

^a NS = not significant

*Chi square significant at $p < .05$

Functional Status

The Duke OARS instrumental Activities of Daily Living (IADLs) was used to assess current participant functional status, with each of the seven activities scored a 0 (completely unable to do activity), 1 (can do activity with some help), or 2 (can do activity without help). A total IADLs score was calculated for current participant functional status. There were no significant differences in any of the individual functional

activities using Chi square or Fisher's exact tests. Results for functionality differences by retirement status groups are presented in Table 16.

Table 16

Functionality Differences by Retirement Status

	<u>Retirement Status (n=80)</u>						<u>χ^2</u>
	<u>Part-time</u> <u>n (%)</u>			<u>Full-time</u> <u>n (%)</u>			
	<u>No</u>	<u>Need some help</u>	<u>Yes</u>	<u>No</u>	<u>Need some help</u>	<u>Yes</u>	
Use the telephone	0 (0%)	1 (4.3%)	22 (95.7%)	0 (0%)	1 (1.8%)	56 (98.2%)	^a NS
Get to places without help?	0 (0%)	2 (8.7%)	21 (91.3%)	0 (0%)	5 (8.8%)	52 (91.2%)	NS
Shop	0 (0%)	2 (8.7%)	21 (91.3%)	0 (0%)	6 (10.5%)	51 (89.5%)	NS
Prepare meals	0 (0%)	1 (4.3%)	22 (95.7%)	0 (0%)	3 (5.3%)	54 (94.7%)	NS
Do housework	0 (0%)	1 (4.3%)	22 (95.7%)	0 (0%)	3 (5.3%)	54 (94.7%)	NS
Take medications	0 (0%)	1 (4.3%)	22 (95.7%)	0 (0%)	4 (7.0%)	53 (93.0%)	NS
Handle money without help?	1 (4.3%)	2 (8.7%)	20 (87%)	0 (0%)	3 (5.3%)	54 (94.7%)	NS

Note: Percentages may not equal 100% due to rounding and missing values.

Note: Chi square or Fisher's exact analysis was run separately for OARS IADL with retirement status.

^a NS = not significant

*Chi square or Fisher's exact significant at $p < .05$

The relationship between retirement type and functionality was significant, with lower functionality for women who were forced to retire compared to women who retired

voluntarily. Specifically, functional abilities were lower in forced retirees in their ability to use the telephone, get to places beyond walking distance, and shop without help compared to voluntary retirees (see Table 17).

Table 17

Functionality Differences by Retirement Type

	<u>Retirement Type (n=80)</u>						<u>χ²</u>
	Voluntary <u>n (%)</u>			Forced <u>n (%)</u>			
	<u>No</u>	Need some <u>help</u>	<u>Yes</u>	<u>No</u>	Need some <u>help</u>	<u>Yes</u>	
Use the telephone	0 (0%)	0 (0%)	58 (100%)	0 (0%)	2 (9.1%)	20 (90.9%)	* <i>p</i> = .020, ^a FET
Get to places	0 (0%)	2 (3.4%)	56 (96.6%)	0 (0%)	5 (22.7%)	17 (77.3%)	* <i>p</i> < .01, FET
Shop	0 (0%)	3 (5.2%)	55 (94.8%)	0 (0%)	5 (22.7%)	17 (77.3%)	* <i>p</i> = .019, FET
Prepare meals	0 (0%)	2 (3.4%)	56 (96.9%)	0 (0%)	2 (9.1%)	20 (90.9%)	^b NS
Do housework	0 (0%)	2 (3.4%)	56 (96.9%)	0 (0%)	2 (9.1%)	20 (90.9%)	NS
Take medications	0 (0%)	2 (3.4%)	56 (96.9%)	0 (0%)	3 (13.6%)	19 (86.4%)	NS
Handle money	1 (1.7%)	3 (5.2%)	54 (93.1%)	0 (0%)	2 (9.1%)	20 (90.9%)	NS

Note: Percentages may not equal 100% due to rounding and missing values.

Note: Chi square or Fisher's exact analysis was run separately for OARS IADL variables with type.

^aFET = Fisher's exact test

^bNS = not significant

*Chi square or Fisher's exact significant at *p* < .05

There were no significant differences in any of the individual functional activities between the retirement timing groups. Results for retirement timing groups are presented in Table 18.

Table 18

Functionality Differences by Retirement Timing

	<u>Retirement Timing (n=80)</u>						<u>χ²</u>
	<u>Early</u> <u>n (%)</u>			<u>On-time</u> <u>n (%)</u>			
	<u>No</u>	<u>Need some</u> <u>help</u>	<u>Yes</u>	<u>No</u>	<u>Need some</u> <u>help</u>	<u>Yes</u>	
Use the telephone	0 (0%)	2 (4.2%)	46 (95.8%)	0 (0%)	0 (0%)	32 (100%)	^a NS
Get to places	0 (0%)	4 (8.3%)	44 (91.7%)	0 (0%)	3 (9.4%)	29 (90.6%)	NS
Shop	0 (0%)	4 (8.3%)	44 (91.7%)	0 (0%)	4 (12.5%)	28 (87.5%)	NS
Prepare meals	0 (0%)	2 (4.2%)	46 (95.8%)	0 (0%)	2 (6.3%)	30 (93.8%)	NS
Do housework	0 (0%)	2 (4.2%)	46 (95.8%)	0 (0%)	2 (6.3%)	30 (93.8%)	NS
Take medications	0 (0%)	2 (4.2%)	46 (95.8%)	0 (0%)	3 (9.4%)	29 (90.6%)	NS
Handle money	0 (0%)	2 (4.2%)	46 (95.8%)	1 (3.1%)	3 (9.4%)	28 (87.5%)	NS

Note: Percentages may not equal 100% due to rounding and missing values.

Note: Chi square or Fisher's exact analysis was run separately for OARS IADL variables with retirement timing.

^a NS = not significant

*Chi square or Fisher's exact significant at $p < .05$

The summed current OARS IADL total scores ranged from 9 to 14 points ($M = 13.54$, $SD = 1.16$). Using the non-parametric K-independent Sample Kolmogorov-Smirnov test, there were no significant differences found in the OARS IADL total scores among the three retirement groups (status, type, and timing). Participants were asked to indicate if they required more help in any of the seven OARS IADL activities since retiring. There were no significant differences in requiring more help in the seven OARS IADL activities since retiring between the three retirement groups (status, type, and timing). An additional question was asked regarding caregiver role. Many participants reported that they provide care for someone else on a regular basis 31 (38.8%). No significant differences for caregiver status were found on the OARS IADL activities between the retirement status, type, and timing groups.

Question #5: What retirement aspects (status, type, and timing) are associated with interdependence adaptations during women's retirement?

Social Support and Culture

Several social support and culture variables served as indicators of interdependence adaptation. Social support and culture variables were examined by retirement status using Chi square or Fisher's exact analyses. While no significant differences were found, clinically relevant patterns of social support variables for part-time and full-time retirees were similar. More than half of both part-time and full-time retirement groups reported always to sometimes receiving needed social and emotional support, having visited friends within the last 30 days, and having friends/relatives for emotional support before and after retirement. In addition, more than half of both part-

time and full-time retirement groups reported living with someone rather than alone. Patterns of cultural variables were found for part-time and full-time retirees with more than half of both groups reported feeling that culture was considered in their health care, they did not need someone else in their healthcare decisions, they prepared and ate culturally-specific foods, and persons felt free to worship or express their spirituality or religion (see Table 19).

Table 19

Description of Social Support and Culture by Retirement Status

	<u>Retirement Status (n=80)</u>				<u>χ^2</u>
	<u>Part-time</u>		<u>Full-time</u>		
	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	
Gets social & emotional support	2 (8.7%) ^a	21 (91.3%) ^b	3 (5.3%) ^a	54 (94.7%) ^b	^c NS
Visited with friends or relatives in last 30 days	0 (0%)	23 (100%)	2 (3.6%)	54 (96.4%)	NS
Has friends or relatives for support pre-retirement	1 (4.3%)	22 (95.7%)	5 (8.8%)	52 (91.2%)	NS
Has friends or relatives for support post-retirement	4 (17.4%)	19 (82.6%)	13 (22.8%)	44 (77.2%)	NS
Lives with someone	9 (39.1%)	14 (60.9%)	15 (26.3%)	42 (73.7%)	NS
Culture considered in healthcare	3 (13.0%)	20 (87.0%)	7 (12.3%)	50 (87.7%)	NS

Table 19 (cont.)

	<u>Retirement Status</u>				χ^2
	<u>Part-time</u>		<u>Full-time</u>		
	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	
Someone else needs to be involved in healthcare decisions	16 (69.9%)	7 (30.4%)	37 (64.9%)	20 (35.1%)	NS
Aware of culturally-specific medical practices	6 (26.1%)	17 (73.9%)	25 (45.5%)	30 (54.5%)	NS
Prepares/eats culturally-specific foods	2 (8.7%)	21 (91.3%)	8 (14.3%)	48 (85.7%)	NS
Free to worship/express religion/spirituality	0 (0%)	23 (100%)	1 (1.8%)	55 (98.2%)	NS

Note: Percentages may not equal 100% due to rounding and missing values.

Note: Chi square or Fisher's exact analysis was run separately for social support and culture variables with retirement status.

^a = Rarely to never, ^b = Always to sometimes

^c NS = not significant

*Chi square or Fisher's exact significant at $p < .05$

Social support and culture variables were examined by retirement type using Chi square or Fisher's exact test analysis. Forced retirees were significantly less likely to report that they get needed social and emotional support compared with voluntary retirees ($p < .01$, FET). Forced retirees were significantly less likely to report that they have friends or relatives for emotional support after retirement compared with voluntary retirees ($\chi^2 = 7.008$, $p < .01$). Other patterns of social support variables were similar for forced and voluntary retirees. More than half of both retirement groups reported having

visited friends within the last 30 days and having friends or relatives for emotional support before retirement. Over half of both forced and voluntary retirement groups reported living with someone.

Similar patterns of cultural variables were found for forced and voluntary retirees, as more than half of both groups reported feeling that culture was considered in their health care, they did not need someone else in their healthcare decisions, they prepared and ate culturally-specific foods, they were aware of medical practices specific to their culture, and felt free to worship or express their spirituality or religion (see Table 20).

Table 20

Description of Social Support and Culture by Retirement Type

	<u>Retirement Type (n=80)</u>				<u>χ²</u>
	<u>Voluntary</u>		<u>Forced</u>		
	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	
Gets social & emotional support	0 (0%) ^a	58 (100%) ^b	5 (22.7%) ^a	17 (77.3%) ^b	* <i>p</i> < .01, ^c FET
Visited with friends or relatives in last 30 days	1 (1.8%)	56 (98.2%)	1 (4.5%)	21 (95.5%)	^d NS
Has friends or relatives for support pre-retirement	5 (8.6%)	53 (91.4%)	1 (4.5%)	21 (95.5%)	NS
Has friends or relatives for support post-retirement	8 (13.8%)	50 (86.2%)	9 (40.9%)	13 (59.1%)	* $\chi^2 = 7.008$
Lives with someone	14 (24.1%)	44 (75.9%)	10 (45.5%)	12(54.5%)	NS

Table 20 (cont.)

	<u>Retirement Type</u>				<u>χ^2</u>
	<u>Voluntary</u>		<u>Forced</u>		
	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	
Culture considered in Healthcare	7 (12.1%)	51 (87.9%)	3 (13.6%)	19 (86.4%)	NS
Someone else needs to be involved in healthcare decisions	41 (70.7%)	17 (29.3%)	12 (54.5%)	10 (45.5%)	NS
Aware of culturally-specific medical practices	22 (39.3%)	34 (60.7%)	9 (40.9%)	13 (59.1%)	NS
Prepares/eats culturally-specific foods	9 (15.8%)	1 (4.5%)	1 (4.5%)	21 (95.5%)	NS
Free to worship/express religion/spirituality	1 (1.8%)	56 (98.2%)	0 (0%)	22 (100%)	NS

Note: Chi square or Fisher's exact analysis was run separately for social support and culture variables with retirement type.

Note: Percentages may not equal 100% due to rounding and missing values.

^a = Rarely to never; ^b = Always to sometimes

^c FET = Fisher's exact test

^d NS = not significant

*Chi square or Fisher's exact significant at $p < .05$

Social support and culture variables were examined by retirement timing using Chi square or Fisher's exact analysis. No statistically significant differences were found. However, clinically relevant patterns of social support were similar for early and on-time retirees. More than half of both retirement groups reported always to sometimes receiving needed social and emotional support, having visited friends within the last 30 days, and

having friends/relatives for emotional support before and after retirement. Both early and on-time retirement groups reported living with someone rather than alone. Similar patterns of cultural variables were found for early and on-time retirees, as more than half of both groups reported feeling that culture was considered in their health care, they did not need someone else in their healthcare decisions, persons prepared and ate culturally-specific foods, participants were aware of culturally-specific healthcare practices, and participants felt free to worship or express their spirituality or religion (see Table 21).

Table 21

Description of Social Support and Culture by Retirement Timing

	<u>Retirement Timing (n=80)</u>				<u>χ^2</u>
	<u>Early</u>		<u>On-time</u>		
	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	<u>n (%)</u>	
	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	
Gets social & emotional support	4 (8.3%) ^a	44 (91.7%) ^b	1 (3.1%) ^a	31 (96.9%) ^b	^c NS
Visited with friends or relatives in last 30 days	1 (2.1%)	47 (97.9%)	1 (3.2%)	30 (96.8%)	NS
Has friends or relatives for support pre-retirement	4 (8.3%)	44 (91.7%)	2 (6.3%)	30 (93.8%)	NS
Has friends or relatives for support post-retirement	12 (25%)	36 (75%)	5 (15.6%)	27 (84.4%)	NS
Lives with someone	11 (22.9%)	37 (77.1%)	13 (40.6%)	19 (59.4%)	NS
Culture considered in Healthcare	5 (10.4%)	43 (89.6%)	5 (15.6%)	27 (84.4%)	NS

Table 21 (cont.)

	<u>Retirement Timing</u>				χ^2
	<u>Early</u> <u>n (%)</u>		<u>On-time</u> <u>n (%)</u>		
	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	
Someone else needs to be involved in healthcare decisions	34 (70.8%)	14 (29.2%)	19 (59.4%)	13 (40.6%)	NS
Aware of culturally-specific medical practices	19 (39.6%)	29 (60.4%)	12 (40%)	18 (60%)	NS
Prepares/eats culturally-specific foods	7 (14.6%)	41 (84.5%)	3 (9.7%)	28 (90.3%)	NS
Free to worship/express religion/spirituality	1 (2.1%)	47 (97.9%)	0 (0%)	31 (100%)	NS

Note: Percentages may not equal 100% due to rounding and missing values.

Note: Chi square or Fisher's exact analysis was run separately for social support and culture variables with retirement timing.

^a = Rarely to never; ^b = Always to sometimes

^c NS = not significant

*Chi square or Fisher's exact significant at $p < .05$

Social support: QLI-Family Subscale. Participants were asked questions from the Quality of Life (QLI) Generic Version, Family subscale regarding how satisfied they were with the family aspects of the lives (Ferrans & Powers, 1985). Higher scores indicated lower satisfaction with family aspects of life. No differences were found among the retirement status, type, or timing groups using one-way ANOVA and age as a covariate.

Open-ended Questions for Perspectives of Retirement

The open-ended question, “*What are your thoughts about retirement now?*” was asked to allow participants the opportunity to share feelings and personal beliefs regarding their retirements. Fifty-one women answered this open-ended question. Four common codes were identified using content analysis: Happy/Love it/Enjoyable; Hate it/Not what I thought it would be; Time to reinvent oneself/Try new things; Enjoying the peaceful pace / time / freedom. A description of participant response codes to this question and supporting exemplars are presented in Table 22.

Table 22

Women’s Thoughts about Retirement

Codes and Exemplars (n = 51)	n (%)
<u>Happy / Love it / Enjoyable</u> “Totally satisfied.” “Retirement has been such a blessing to me.”	22 (43.1)
<u>Hate it / Not what I thought it would be</u> “Didn’t want to do it.” “I realize that a big part of my identity and feeling of worth was attached to my job.”	16 (31.4)
<u>Time to reinvent oneself / Try new things</u> “...it’s still evolving. (I am still creating it).” “My philosophy-Retire to Refire.”	11 (21.6)
<u>Enjoying the peaceful pace / time / freedom</u> “I find the quiet I’ve longed for” “Time for taking life at slower pace.”	2 (3.9)

Participants were asked to share retirement experiences using the open-ended question, “*Anything else you would like to share about your retirement experience?*” Twenty-three women answered this open-ended question. Six common codes were identified using content analysis: Less stressful/relief; Able to spend more time with family and friends; Lost / Haven’t quite figured it out yet; Not what I expected it would be; One needs to keep busy, and Health and Money concerns. Participant response descriptions to this question and supporting exemplars are presented in Table 23.

Table 23

Women’s Retirement Experiences

Codes and Exemplars (n = 23)	n (%)
<u>Less stressful / Relief</u>	6 (26.1)
“Retiring has allowed me time to exercise, allowing me to feel good.” “Great relief to be released from stress of the workplace!”	
<u>Able to spend more time with family and friends</u>	6 (26.1)
“...more time for friends, family, and myself!!” “I like retirement so I can keep my grandbaby.”	
<u>Lost / Haven’t quite figured it out yet</u>	4 (17.4)
“I have not found my own way to “give back.” “Living by myself and not having children, some days I don’t talk with anyone because family is busy.”	
<u>Not what I expected it would be</u>	3 (13.0)
“Your life is still just as busy if not busier.” “Not enough senior driven programs that are low cost or free for seniors.”	

Table 23 (cont.)

Codes and Exemplars	n (%)
<u>One needs to keep busy</u>	2 (8.7)
“Have a reason to get up every day.” “I also help out with an 8-year old niece with transporting her to/from school and gymnastics.”	
<u>Health and Money concerns</u>	2 (8.7)
“There is an element of fright or uncertainty about financial security filling the media about ‘baby boomers’.” “Having to retire because of medical reasons has caused a lot of financial problems and has made life so difficult.”	

Chapter Summary

Eighty women aged 55 years and older who were retired at least part time from working outside the home were recruited using convenience sampling from senior community settings within five southeastern US states. The average age of participants was 66 years. The majority of women were white, married, non-caregivers, and resided in rural areas. Health outcomes and health conditions were determined using self-report questionnaires by participants. Retirement groups were identified by retirement status (part-time or full-time retired), retirement type (voluntary or forced retirement), and retirement timing (early or on-time). Retirement group differences for continuous health outcome variables were compared using one-way ANOVA with age as a covariate in the model. Chi-square tests were used to determine differences in the proportion of women grouped by retirement type, timing, or status and categorized by the presence or absence

of health conditions or defined outcome conditions. Retirement experiences and feelings regarding retirement were explored using two open-ended questions.

Retirement type was significantly associated with variables within all four RAM adaptation modes, with forced retirement showing poorer health outcomes compared to voluntary retirement. Health conditions of stroke, diabetes, and memory/cognitive impairment were significantly related to forced retirement. Incontinence of bladder/bowel was significantly higher in forced retirees compared to voluntary retirees. Self-rated health was significantly poorer in forced retirees compared to voluntary retirees. Volunteer engagement was significantly less in forced retirees compared to voluntary retirees. Also, forced retirees were likely to have less perceived social support from friends and relatives after retirement than persons who retired voluntarily. Race was found to be significantly related to retirement type, with a greater proportion (63.2 %) of minority women being forced to retire compared to Caucasian (<17%) women. Participants shared four areas (*Happy, Not what I expected, Time to reinvent oneself, and Enjoying the peace*) of experiences and feelings regarding their retirement.

CHAPTER V

DISCUSSION

The purpose of this study was to explore selected health outcomes in older women during retirement and to determine whether women's health outcomes were associated with retirement status, retirement type, and retirement timing. Interpretation of study findings and conclusions are presented. Implications for practice, education, and health policy are discussed and areas of recommendation for future research are provided. Limitations for generalizability of findings are considered.

The sample of retired women in this study was comparable with respect to participant age in prior research studies on the retirement experiences of women and women's health during retirement (Boyles et al., 2013; Calvo, Sarkisian, & Tamborini, 2013; Davis, 2005; Duberley, Carmichael, & Szmigin, 2014; Kim & Moen, 2002; Kloep & Hendry, 2006; Zhan, Wang, Liu, & Shultz, 2009). Age of retirement for participants in this study averaged 62 years, similar to the mean retirement age reported in previous studies (Munnell, 2015). The average age of retirement for African-American retirees in this study was 62 years compared to 63 years for white retirees. This finding follows a similar pattern with prior studies reporting that African-American females retire earlier than white females (Knoll, 2011).

In this study, almost 29% of participants were retired, but working part-time. This is in agreement with previous studies reporting that many women were likely to engage

in part-time employment following formal retirement (Cahill, Giandrea, & Quinn, 2015; Hebert & Luong, 2008; Quinn & Kosy, 1996). Study participants cited job-related reasons, including being fired or laid off, most often. This is similar to earlier studies that stated Baby-Boomer women were likely to leave their working career retire due in an unexpected and forced manner (Cahill, Giandrea, & Quinn, 2015). People currently retire at different ages compared to a time when there was a “retirement age”. Women who retired voluntarily and on-time in this study were older compared to women who were forced to retire early. A greater percentage of the part-time retirees reported having diabetes compared to full-time retirees. Timing was related to health conditions in that early retirees reported having chronic heart disease and serious difficulty with memory post-retirement more often than on-time retirees. Conversely, a greater proportion of on-time retirees reported having arthritis compared to early retirees.

Contextual Factors

Marital status, educational level, race/ethnicity, age, BMI, caregiver status, and rural status were considered as contextual factors in this study with respect to retirement status, type, and timing. Retirement type was significantly different among racial groups in this study, with a greater proportion of minority women being forced to retire compared to white women. This finding was similar to a prior study reporting a greater percentage of African-American women leaving work involuntarily (Knoll, 2011). Most of the current literature is based on men’s retirement issues and concerns and does not reflect the dissimilar family expectations that influence women’s career paths. In the literature, reasons for women to retire include finances, health concerns, and the need to

be a caregiver (Kloep & Hendry, 2006; Wang, 2013). Similarly, in this study, many participants reported the need to care for another and health issues as reasons to retire from their working lives.

There are gaps in the literature regarding marital status, educational level, and rural status of women as it relates to retirement status, type, and timing. In this study, marital status, educational level, and rural status were not statistically significant between the retirement groups, however there is clinical relevance to study findings. It is reported in the literature that married retirees have better adjustment to retirement compared to single or widowed retirees (Pinquart & Schindler, 2007). A greater proportion of married women retired earlier and on a full-time basis than women who were not married in this study. Married women often will time their retirements based upon the retirement of their spouses, which may help explain why married women retired both earlier and on a full-time basis in this study (Nahum-Shani & Bamberger, 2011). Women who were retired voluntarily and on a full-time basis had more education than those women forced to retire and part time retirees. This finding may be related to financial status at the time of retirement.

Adaptations to Retirement

Physiological Adaptations

Adaptations in the RAM physiological adaptation mode were measured as physical function and the presence or absence of selected health conditions. In this study, retirement status was significantly associated with having diabetes. The part-time retirement group had a larger proportion of participants with diabetes than the full-time

retirement group. Likewise, retirement type was significantly related to having diabetes, with a greater proportion of forced retirees reporting diabetes compared to voluntary retirees. There is a gap in the literature regarding the relationships between incidence of diabetes and women's retirement status and type. Retirement timing was not related to having diabetes in this study. This finding differs from a previous report that early retirement is related to incidence of diabetes (Herquelot, Guéguen, Bonenfant, & Dray-Spira, 2011). Herquelot et al. utilized a sample that was primarily composed of men, while the current study included a sample of only women (2010). There may be intrinsic gender differences in the two study samples that account for the variation in study findings.

Stressors, such as retirement, have been related to vascular and memory impairment in older adults (Mount et al., 2011). Forced retirement may pose a particularly stressful retirement situation compared to a voluntary retirement. In this study, retirement type and having experienced a stroke were significantly related, with forced retirees reporting stroke experience more often than voluntary retirees. Similarly, retirement type was significantly associated with reports of cognitive/ memory impairment, serious difficulty with memory, memory loss that scared them, and memory loss that caused everyday life to be more difficult in forced retirees compared to voluntary retirees. There is a gap in the literature regarding retirement type and vascular and memory impairment in older women, however being retired in general has been associated with cognitive impairment (Bonsang, Adam, & Perelman, 2010). In this study, being partially or totally incontinent of bladder and retirement type were significantly

related, with a greater percentage of forced retirees reporting partial or total incontinence compared to women who retired voluntarily. A gap in the literature exists for urinary incontinence in women with respect to forced or voluntary retirement types, thus a comparison with the current study findings on urinary incontinence could not be documented.

Retirement timing and chronic heart disease were significantly related, with a greater proportion of early retirees reporting chronic heart disease compared to participants who retired on-time. This finding is similar to prior research findings of increased risks for cardiovascular disease in women (Behncke, 2012; Moon, Glymour, Subramanian, Avendaño, & Kawachi, 2012). The timing of retirement was related to arthritis in this study, with a significantly greater proportion of participants that retired on-time compared to those who retired prior to age 65 years. There is limited information regarding the relationship between arthritis and retirement in the literature, however age-related affects cannot be ruled out. Early retirement has been reported to reduce overall physical health functioning in women (Calvo, Sarkisian, & Tamborini, 2013). With respect to the timing of retirement, early retirement has been associated with poorer cognitive ability (Rohwedder, & Willis, 2009). Similarly, in this study, early retirement was significantly related to serious difficulty with memory post-retirement compared to those who retired on-time.

According to Montross et al., older adults have the expectation of some physical function decline as a consequence of aging, however they may remain content even with some physical function limitations (2006). While there were no significant differences

between physical function among any of the retirement groups both before and after retirement, partial or total incontinence of bladder or bowel was reported by more than one third of participants. This is clinically-significant because this condition can limit functionality and negatively impact self-esteem (Sinclair & Ramsy, 2011). With a greater proportion of forced retirees reporting bladder/bowel incontinence compared to voluntary retirees, self-esteem concerns are heightened, given the social and personal consequences of losing one's job unexpectedly.

Self-Concept Adaptations

Health measures in this study represented within the self-concept adaptation mode included self-rated health and HRQOL. The results suggest that retirement type may have a significant impact on women's quality of life. As an example, forced retirees had significantly lower post-retirement self-rated health compared to voluntary retirees, and forced retirees rated their comparable health (comparing their own health to the health of others) lower than voluntary retirees. These findings are consistent with previous findings that women report lower ratings of self-perceived health when forced to retire from jobs compared to women retiring voluntarily (Artazcoz, Cortès, Borrell, Escribà-Agüir, & Cascant, 2010).

Participants who had forced retirements had significantly lower satisfaction scores regarding psychosocial and spiritual aspects of life (QLI- psychosocial/spiritual) compared to women who had retired voluntarily. Similarly, forced retirees had significantly higher HRQOL-3 scores, indicating more unhealthy days and lower health-related quality of life, compared to voluntary retirees. This finding is consistent with

previous studies that described a higher level of perceived satisfaction with life in voluntary retirees compared to involuntary retirees (Hershey & Henkens, 2013; Mein & Ellison, 2006).

Role Function Adaptations

Adaptations in the RAM role function adaptation mode were measured as functional status and activity engagement. Retirement type and functionality, as measured by IADLs, were significantly related, with lower functionality in participants who were forced to retire compared to participants who retired voluntarily. Functional abilities that were reduced in forced retirees compared to voluntary retirees include: ability to use the telephone, ability to get to places beyond walking distance, shopping ability without help. This is consistent with a previous study that reported greater difficulty with IADLs during retirement (Wang & Shultz, 2010).

For many women, retirement alters relationships with friends, former colleagues, and family (Wang, 2013). Volunteer activity engagement has been reported to increase quality of life in retirees (Potočnik & Sonnentag 2013). In the current study, part-time retirees were significantly less likely to participate in volunteer activities compared with voluntary retirees. This may be due to limited time and energy to devote to volunteer activities due to remaining in the work force. In this study, women who were forced to retire participated less in volunteer activities compared with voluntary retirees. Reduction in financial means and lower self-esteems due to being forced to retire may help explain why forced retirees have lower activity engagement compared to voluntary retirees (Mein & Ellison, 2006). Greater health issues present in the forced retiree

population, as supported in this study, may also partially explain the low activity engagement in this group.

Caregiving is an activity that has been considered to be bad for one's health (Wang, 2013). Women are likely to be caregivers for children, grandchildren, parents, and others, and as a result, work part-time more often in order to fulfill caregiver responsibilities (Women's Bureau, BSL, 2015). Women may not fully understand how caregiving can often limit opportunities in the workforce and decrease their socioeconomic status both during their working careers and in retirement (Loretto & Vickerstaff, 2013). More than one third of the women in this study engaged in caregiving activities. As a result of being a caregiver, women often experience declines in health and report increased loneliness. (Choi, Burr, Mutchler, & Caro, 2007; Pinquart & Sorensen, 2003). Some of the poorer health indicators reported in this study may have been impacted by the relatively high rate of caregiving delivered by participants, and thus higher proportions of caregivers in this study may have clinical relevance.

Interdependence Adaptations

In this study, health measures characterized within the interdependence adaptation mode included social support and culture. Older women live alone more often compared to men (West, Cole, Goodkind, & He, 2014). Forced retirees in this study were less likely than voluntary retirees to have friends or relatives available to them for emotional support following retirement. Social support systems that include family and friends have been reported to positively influence health during women's retirement (Price & Dean, 2009). Poorer health outcomes in forced retirees in the current study may be related to the lack

of a reliable social support system. Compared with voluntary retirees, forced retirees in this study were significantly less likely to report that they get needed social and emotional support. The lack of social support for women during the retirement years has been reported to exacerbate risk for multiple health conditions, including depression (West, Cole, Goodkind, & He, 2014).

Adaptation Responses by Retirement Groups

Retirement status. The incidence of diabetes was significantly different between the retirement status groups, with a greater proportion of part-time retirees having diabetes compared to full-time retirees. Many commonalities with the variables existed between the retirement status groups. There was no significant differences in the contextual factors between the part-time and full-time groups. Scores of physical function and incidence of all health conditions except diabetes, were also found to be similar among the retirement status groups. Likewise, no dissimilarities in measures of self-rated health, HRQOL, functionality, activity engagement, social support, and cultural considerations were found between the retirement status groups. Retirement status was not found to be highly related to most selected health outcomes in this study.

Retirement type. The type of retirement was found to be associated with health outcome measures across all four of the RAM adaptive modes. Minority women were more likely to be forced to retire compared to white women. Health conditions (diabetes, stroke, and memory impairment) were reported significantly more often with forced retirees compared to voluntary retirees. This finding is of particular importance due to previous linkages reported in the literature between these conditions and their association

with poorer health in women. Other health conditions, weight changes, and ADLs were reported similarly between the retirement groups. Partial or total bladder and bowel incontinence, self-rated health, three individual functionality activities, and social support were indicators of poorer health for forced retirees compared to voluntary retirees.

Retirement timing. Most of the examined health outcomes showed commonalities between the retirement timing groups. For those who retired at age 65 or older (on-time), age was the only contextual factor that was statistically different between the retirement timing groups, with older women retiring on-time more often than early. Arthritis was the only reported health condition associated with those who retired on-time more often than those who retired at age 64 years or younger, and this may be age-related. Early retirees were significantly more likely to report serious difficulty with memory after retiring and chronic health disease compared to those who retired on-time. It may be that these health conditions helped contribute to lower functionality prior to the retirement decision.

Retirement group differences were examined with participant contextual factors. Health as adaptations within the four RAM adaptive modes were explored for differences between the three retirement groups. A matrix of all adaptation responses was created to offer an overview of study analyses results. The adaptation response matrix by retirement groups is presented in Table 24.

Table 24

Adaptation Response Matrix by Retirement Groups

Adaptation Response	<u>Status</u>		<u>Type</u>		<u>Timing</u>	
	<u>Part-Time</u>	<u>Full-Time</u>	<u>Forced</u>	<u>Vol</u>	<u>Early</u>	<u>On-time</u>
Age				*		*
Race/Ethnicity			*			
Chronic Heart Disease					*	
Stroke			*			
Diabetes	*		*			
Arthritis						*
Cognitive Impairment			*			
Difficulty w/ Memory Post-retirement			*		*	
Memory loss scared you post-retirement?			*			
Memory causes life to be difficult post-retirement?			*			
Incontinent of bladder or bowel			*			
Self-rated Health			*			
Comparative self-rated health			*			
VAS post-retirement			*			
Current HRQOL-3			*			
QLI-Psychosocial and Spiritual			*			
Using the Telephone			*			
Getting to Places			*			
Shopping			*			
Social & Emotional Support			*			
Friends or Relatives for Emotional Support After Retiring			*			

*Significant at $p < .05$

Perspectives of Retirement

Thoughts about Retirement

Participants were given the opportunity to share views and personal outlooks regarding their retirement. More than half of the study participants answered the open-ended question exploring thoughts about retirement. Using standard content analysis with review of the responses by two investigators and agreement reached, four codes were recognized from the responses. These codes included: *Happy/Love it/Enjoyable*; *Hate it/Not what I thought it would be*; *Time to reinvent oneself/Try new things*; *Enjoying the peaceful pace / time / freedom*. Nearly half of the participants reported positive thoughts regarding their retirement, revealing that they “love it” and felt that it was “such a blessing”. Almost one fourth of the women in this study reported their retirement as “evolving” or believe that one should “retire to refire”.

The current study findings among women, are similar to a previous report that retirement has been reported to sometimes bring about a renewed sense of purpose and may become the time to reinvent one’s self (Lips & Hastings, 2012). Nearly one third of participants reported negative feelings towards their retirement. One participant presented this negative sentiment as a realization during retirement that her “identity and feeling of worth was attached to my job.” Feelings of not having a purpose and being useless to society have been associated with retirement for women (Lips & Hastings, 2012). Finally, a small proportion of the study sample resonated feelings of just being able to be quiet and take things at “a slower pace”. The notion that some retirees want retirement to be a time of slowing down is a well-documented finding (NIA, 2015).

Women's Retirement Experiences

Study participants were given the opportunity to share any specific retirement experiences in an open-ended question format. About one fourth of participants answered this open-ended question. Six codes were identified from the responses using basic content analysis: *Less stressful/relief; Able to spend more time with family and friends; Lost / Haven't quite figured it out yet; Not what I expected it would be; One needs to keep busy, and Health and Money concerns*. Many of these codes reflect the historical and economic situation of the past decade, involving financial uncertainty and including overarching changes in the way health care systems are implemented in the United States.

Participants reported retirement as a time of decreasing worry and concern. Additionally, participants described retirement as an opportunity to dedicate more personal time with family and friends. Many participants voiced a concern of being lost. Some women were surprised with what occurs in retirement, compared to retirement expectations. Other participants voiced that a sense of purpose was important to their retirement. The final topic voiced by the women was a concern over health or financial issues. These findings may be reflective of long-term social changes in women's roles as working women that often still shoulder the majority of household and family responsibilities. Similar findings of retirement experiences have been reported from prior studies on women's experiences in retirement transitioning (Duberley, Carmichael, & Szmigin, 2014).

Conclusions

This sample of retired women within the community mirrors the increasing cohort of retired women within the United States. Participants in this study generally had high function, were independent, and active within the community. Retirement type was shown to be important in health outcomes within all four of the RAM adaptation modes. Significant new knowledge was found in this study, to identify an association between forced retirement and physiological, self-concept, role-function, and interdependence adaptations as health outcomes during retirement. Findings regarding health outcomes and retirement status and timing provided additional new knowledge. Women of minority race/ethnicity in this study were more likely to have forced retirements than white women. Minority women may have an increased risk for negative health associated with forced retirement.

The forced retirement type was related to physical health, mental health, role functioning, and social functioning. Diabetes, stroke, memory loss, and incontinence were significantly related to forced retirement. Connections between cardiac disease or stroke, type 2 diabetes, and memory loss have been well-documented in the literature (Alzheimer's Association, 2007; Justin, Turek, & Hakim, 2013; Messier, Awad, & Gagnon, 2004; Paciaroni & Bogousslavsky, 2013). The increased proportion of diabetes, cardiac disease, and memory loss in women forced to retire is a significant finding and similar to results from a prior study (Behncke, 2009). Due to the cross-sectional design of the study, it is not possible to determine the direction of this relationship between forced retirement and having these health condition. Forced retirement type was related

to lower self-rated health, lower functionality, less participation in volunteer activities, and less emotional support from friends and family. Part-time retirement status was associated with having diabetes and volunteer activity. Early retirement was related to having chronic heart disease and arthritis. The results of this study suggest that there is a connection between aspects of retirement, particularly with respect to retirement type, and having cardiac disease, diabetes, and memory impairment in women.

Implications

The findings of this study have important implications in the areas of clinical practice and health policy. Retirement occurs concurrently with aging. Therefore, it is difficult to interpret whether and how retiring alters an individual's health from its current course of aging. Preparing for a healthy retirement is essential for all, however, it may be particularly necessary for vulnerable populations such as women and minorities (Administration on Aging, 2012). All participants retired within the last ten years. It may be that study results are in some capacity reflective of the 2008 economic downturn and a new generation of women who worked outside the home most of their lives.

With respect to practice implications, results from this study can be applied to the essential goal of promoting healthy adaptations to retirement. As primary caregivers for others, women often do not take care of planning for their future retirements, with more than half of women reporting being worried about becoming a burden to their family and most not talking to anyone about future wishes or financial matters (Nationwide Retirement Institute Health Care and Long-term Care Survey, 2015). Forced retirement due to being pushed out of the labor market through lay-offs and termination of

employment may position a woman in an economically-challenging situation that impacts health (Cahill, Giandrea, & Quinn, 2015; Lips & Hastings, 2012). Forced retirement may lower a woman's self-esteem, quality of life, and decrease health-seeking behaviors. Early recognition and appropriate intervention with vulnerable populations such as older women may facilitate positive adaptations to retirement through resource referrals and attaining assistance prior to and during retirement.

The volunteer experience, through helping others, improves an individual's quality of life (Grant & Sonnentag, 2010). Encouragement of participation in volunteer activities may provide a feasible strategy to improve the quality of life for forced retirees during retirement. Insights into women's retirement experiences offer an opportunity for nurses and other health care workers to address areas of health care needs through resource referrals and assistance prior to and during retirement transitioning.

Health and career policy implications from the findings of this study are particularly related to forced-age retirement. Women's working lives are impacted early on by their personal life situations as well as employment tendencies and economic trends. Women's working careers are often discontinuous, frequently pausing careers to raise children, provide care for others, or relocate due to a husband's job. Spousal retirement is influential in the timing of women's retirement (Nahum-Shani & Bamberger, 2011). Changing job locations or occupations that affect financial outlooks for women later during retirement, as they may not have adequate pension funding or savings. While the non-linearity of working careers are not exclusive to women, there is evidence of a greater career discontinuity for women compared to men (Roberts, 2015).

Employee policy changes reflecting different social expectations of women and offering more flexibility may be a plausible solution to this problem (Lips & Hastings, 2012). It is important to make the case for women's career management assistance that addresses gender-specific circumstances for women prior to the time of retirement planning. Such assistance may impact retirement planning and preparation, as this has been related to health-seeking behaviors (Carr, Sages, Fernatt, Nabeshima, & Grable, 2015).

Limitations and Assumptions

An important theoretical assumption of this study was that health outcomes are adaptations to stimuli during the transitional period of retirement. Roy's Adaptation Model provided an excellent framework to consider a variety of health conditions and outcomes that are of particular importance to older women. The model, however, is uni-directional starting from the focal stimulus outward and assumes that adaptations (health) must be responses to the focal stimulus of retirement. A bi-directional conceptual framework may be more useful for the mostly unexplored topic of health and women's retirement. A bi-directional framework may offer alternate and plausible pathways for future research endeavors.

There are inherent limitations to the cross-sectional design due to the single data collection time point. Generalizability of findings from this study was limited due a convenience sample, higher educational levels of participants than that of the general population of women this age. Sampling was limited to women living in community households within five states in the southeastern region of the United States. Women were not included in this study if they self-identified as homemakers not working outside

of the home or in a home-based business which may not represent all women who retired during this time period. Institutionalized individuals were not represented in this study. Validity of study results depended upon honest self-report responses from study participants which may be altered from the actual experiences requested for recall.

Chapter Summary

The purpose of this cross-sectional descriptive study was to explore health outcomes in older retired women and to describe relationships between aspects of retirement (status, type, and timing) and selected women's health outcomes. Roy's Adaptation Model provided the framework for this study, establishing a guide for important health considerations and outcomes in older women to the focal stimulus of retirement. This study generated new knowledge regarding how retirement status, type, and timing relate to essential health outcomes for the fast-growing population of women retirees in the United States. A greater proportion of minority women in this study's sample population were forced into retirement compared to white women. Retirement type was found to be significantly related to health conditions and outcomes in all four of the RAM adaptive modes. This new knowledge reveals useful information for clinicians and has important implications that may lead to interventions for this population to improve health outcomes during retirement. In addition, labor or corporate employers should consider strategies that include greater job flexibility and phased work options to increase employee retention and re-evaluate current policies when planning women's retirement.

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