Transition to Old Age:
How Do Sexual Behaviors and Personality Contribute to Successful Aging?

by Chelsea Manchester Eckhouse

B.A. in Psychology, May 2012, The Catholic University of America
M.A. in Clinical Mental Health Counseling, August 2014, Marymount University

A Dissertation submitted to

The Faculty of
The Graduate School of Education and Human Development
of The George Washington University
in partial fulfillment of the requirements
for the degree of Doctor of Philosophy

May 20, 2018

Dissertation directed by

Richard P. Lanthier
Associate Professor of Human Development

The Graduate School of Education and Human Development of The George Washington University certifies that Chelsea Manchester Eckhouse has passed the Final Examination for the degree of Doctor of Philosophy as of March 6, 2018. This is the final and approved form of the dissertation.

Transition to Old Age:
How Do Sexual Behaviors and Personality Contribute to Successful Aging?

Chelsea Manchester Eckhouse

Dissertation Research Committee:

Richard P. Lanthier, Associate Professor of Human Development, Dissertation Director

Brandi A. Weiss, Associate Professor of Educational Research, Committee Member

Marcela Kepic, Visiting Assistant Professor of Counseling and Human Development, Committee Member

Dedication

This dissertation is dedicated to my grandmother, Josephine Gigliotti, my mother, Maria Manchester, and my husband, Larry Eckhouse. To my Grandma Josie, who supported my education when others either would not or could not; without your support I would never have been able to come this far. I will never forget your love and generosity at a time in my life when I needed it most. To my mom, your encouragement, love, and food often pushed me when I felt completely depleted. The lunches that you packed for me throughout graduate school will be something that I will always remember. Those loving touches always made me feel as though I could continue in my journey. And lastly to my wonderful husband and partner in life. Larry, you have been my comfort when I needed to rest, by backbone when I needed to "steel my spine," my confidant when I needed to vent my frustrations, and my unconditional support throughout my graduate education. Every beautiful moment in my life has happened with you by my side. I am thankful every day that you found me on that metro platform.

Acknowledgements

There have been so many individuals who have provided support throughout this process to thank, and words cannot fully convey how appreciative that I am for the role that they have had. First, to my siblings, you have all helped to inspire me, ground me, and cheer for me at different times in this process. I am so grateful to have you all in my life. Also, to my wonderful in-laws that I am lucky enough to call family. You have all been so supportive of my journey since the beginning, and I appreciate all of your encouraging words along the way. Next, I have thank my wonderful, inspirational, and supportive cohort, as well as my colleagues in other cohorts who have also been a part of this journey. You have all helped me in different ways, and I have been honored to experience this program with you all. I look forward to continuing to work with you all and develop in our practice.

And a very special thanks to my wonderful committee: Drs. Weiss, Kepic, and Lanthier. Dr. Weiss, thank you for always being available to discuss the challenges and worries that I have carried regarding quantitative analysis. You helped me to feel more confident in my skills as a researcher, and always made me feel as though my self-doubts were only temporary. To Dr. Kepic, thank you for all of the time and support that you have provided me throughout the process, and your keen insights regarding the geriatric population. I feel so humbled to have been able to work with you, and I am so appreciative of your openness and willingness to talk through different aspects of my research. You have truly helped me be a better writer and have broadened my knowledge of the older population. And finally to my dissertation chair, Dr. Lanthier. Words are not enough to convey how grateful I am for your guidance and support throughout our time

working together. You have been instrumental in my work and my ability to "bulldog" my way through this process, and I am especially grateful for your understanding my own personality quirks. I feel honored to have had the opportunity to work with you, thank you for being such an incredible mentor and teacher.

Wrinkles should merely indicate where smiles have been.

-Mark Twain

Abstract

Transition to Old Age:
How Do Sexual Behaviors and Personality Contribute to Successful Aging?

The rate of individuals transitioning to old age (*i.e.* 65 and older) is expected to exponentially increase in the coming years (United Nations Development Division, 2015), and as such society's need for research promoting successful aging to meet the demand for this growing population is accelerating. The transitionary period into old age holds significant and diverse challenges and losses that interact across life domains, and can make old age seem depressing and lead to a decline in well-being (Stevernick, 2014). Although older adults have many challenges that are associated with old age, many continue to live in a positive and adaptive way (Jeste & Oswald, 2014). As such, successful aging has become a highly researched model, which refers to relatively high levels of cognitive, physical, and social functioning, and distancing from disease and disability (Rowe & Kahn, 1997). The purpose of the current study was to investigate whether higher levels of sexual frequency and sexual satisfaction as well as personality predicted successful aging. Successful aging was operationally defined through the change in overall psychological well-being from middle to older adulthood. Health status and gender were also assessed to see whether they moderated the effect of predictors on overall psychological well-being. The study employed previously collected data from the Wisconsin Longitudinal Study (WLS), a large sample of Wisconsin high school graduates who provided longitudinal data on diverse information across an extensive period of time (Herd, Carr, & Roan, 2014). The data used was collected from the 1993 and 2011 waves when participants were an average of 53 and 71 years old. Variables were created from self-report survey items from Ryff's Psychological Well-Being Scales

(Ryff & Keyes, 1995), the Big Five Inventory, version 54 (BFI-54) (John, 1990; John, Donahue, & Kentle, 1991), self-report data on sexual behaviors, and demographic information. Two-way mixed effects ANOVA and hierarchical multiple regressions indicated that sexual frequency, sexual satisfaction, and personality all predicted change in overall psychological well-being. Health and gender did not moderate the relationship between sexual behaviors and psychological well-being, however the relationship between personality and psychological well-being was partially moderated by health and gender.

Table of Contents

Dedication iii

Acknowledgements iv

Abstract vii

List of Figures xi

List of Tables xii

Chapter I: Overview 1

Introduction 1

Statement of the Problem 3

Statement of Significance 6

Research Questions and Hypotheses 10

Theoretical Underpinnings 11

Methodology 18

Limitations and Delimitations 19

Key Terms 20

Chapter II: Literature Review 24

Old Age 24

Psychological Well-Being 30

Sexual Behavior 39

Personality 49

Inferences for Current Study 57

Chapter III: Methodology 60

Research Questions and Hypotheses 61

Participants 64

Measures 70

Data Analysis 80
Summary 83
Chapter IV: Results 85
Two-Way Mixed Effects ANOVA 85
Hierarchical Regression Analyses 87
Summary 127
Chapter V: Discussion 128
Research Question One: Change in Overall Psychological Well-Being 129
Educational Attainment, Net Worth, and Employment 131
Research Question Two: Sexual Behaviors Predict Change in Overall Psychological Well-Being 133
Research Question Three: Personality Predicts Change in Overall Psychological Well-Being 135
Research Questions Four and Five: Moderated Effects of Gender and Health on the Relationship between Sexual Behaviors and Psychological Well-Being 138
Research Question Six: Moderated Effects of Gender and Health on the Relationship between Personality and Psychological Well-Being 140
Limitations 143
Recommendations for Future Research 147
Implications for Practice 151
Summary and Conclusions 154
References 157

List of Figures

Figure 1 120
Figure 2 126
Figure 3 126

List of Tables

Table 1 67
Table 2 72
Table 3 73
Table 4 74
Table 5 76
Table 6 78
Table 7 94
Table 8 95
Table 9 97
Table 10 99
Table 11 102
Table 12 104
Table 13 106
Table 14 108
Table 15 110
Table 16 113
Table 17 115
Table 18 117
Table 19 121
Table 20 125

Chapter I: Overview

Introduction

Older adults' well-being has become a topic of increased attention due to the rapid rate of population growth of persons 65 and older. With the post-World War II baby boomer generation in Europe and the United States transitioning into old age, there will be an increase of about 236 million people aged 65 and older throughout the world in the next ten years (He, Goodkind, & Kowal, 2016). These numbers are only expected to grow due to increases in average life expectancy. The life expectancy of a baby born in the industrialization era was 47-55 years, however today average life expectancy has risen by approximately 30 years (Stuart-Hamilton, 2006). Despite the expectation that the population of adults aged 65 and older will continue expanding, research and services have not kept pace with the correspondingly increasing demand. There is currently a dearth of research on older populations; therefore, additional study is paramount as this population becomes an ever-larger share of society and their individualized needs related to their well-being become critical macroeconomic and public health concerns.

Mental illness is a phenomenon that continues to be highly stigmatized despite advances in understanding its psychological and physiological bases, and this stigma is compounded when mental illness is associated with older adults (Puentes, Bradway, Adelage, 2010). Although mental illness and decline are still considered by many to be inevitable consequences of aging, this perspective has begun to shift. Many studies continue to suggest a bleak outlook for older adults, however recent research has begun to establish a more positive outlook of the aging process. The promotion of successful aging and better understanding as to how to age successfully should help mediate

between the escalating health and social care costs that are rising with the growing older population. Longitudinal research, specifically, is vital to study the process of aging to determine the factors which contribute to successful aging (Riediger, Li, & Lindenberger, 2006). Though more research is still needed, the increased attention toward successful aging seems to be bringing more awareness toward the challenges and strengths of the older adult population.

Well-being has been a topic of particular interest in studies of aging. It has been viewed through two different lenses: subjective or hedonic well-being, and psychological or eudaimonic well-being. The latter, eudaimonic well-being, is rooted in several theorists' perspectives and is based upon the premise that happiness is acquired when people experience purpose in life, face and overcome challenges, and achieve overall growth (Keyes, Shmotkin, & Ryff, 2002). Psychological well-being has become increasingly prevalent in the studies of older adults, as previous studies were generally rooted in subjective well-being. Although there is a growing number of studies utilizing psychological well-being, there is still a general dearth of research on older adults and psychological well-being, specifically with respect to longitudinal studies analyzing psychological well-being change over time. The current study helped to bridge this gap, and also identified constructs which promote psychological well-being as individual's transition into old age.

Constructs which were examined as predictors of change in psychological well-being over time were sexual behaviors and personality traits. Sexual behaviors are largely ignored in the older adult population in general, even though most men and women continue to engage in sexual intercourse and other sexual behaviors throughout

older age (Schick, Herbenick, Reece, Sanders, Dodge, Middlestadt, & Fortenberry, 2010). Additionally, even though personality is a heavily researched construct (Ryff, 2008) longitudinal studies have yet to identify how personality impacts well-being in older adults over time. In the current study, the author examined the influence of sexual behaviors and personality on overall psychological well-being as individuals transition into older age. Furthermore, the author assessed whether physical health and gender moderates this relationship.

Statement of the Problem

The substantial increases in life expectancy combined with medical advances has led to many more individuals making the transition to older adulthood. Most gerontologists, as a general rule, take an age of 65 years to indicate the onset of old age (Silverstein & Giarrusso, 2010). Not only was this the established age of retirement under the Social Security Act of 1935, but also has been viewed as a time when decline in different life domains become readily apparent (Stuart-Hamilton, 2006). Though a longer average lifespan is generally a positive advancement, it does not come without challenges. Increased longevity has also led to progressively expanding healthcare and social costs, as older adults face higher rates of physical and mental disability than younger populations (Chatterji, Byles, Cutler, Seeman, & Verdes, 2015). Not only that, but members of the older population have some of the highest levels of mental health challenges in society. The prevalence of diagnosed depression in U.S. adults 65 years of age or older doubled from 3% to 6% between 1992 and 2005 (Akincigil, Olfson, Walkup, Siegel, Kalay, Amin, ... & Crystal, 2011). The rate of depression in older adults is not only rising, but is likely underdiagnosed. With the number of older adults increasing

substantially, a tremendous need for increased services has become apparent. However, due to the complex nature of the aging process and the diverse needs of those transitioning into older adulthood, many of the services provided have proven inadequate (Stuart-Hamilton, 2006). This shortfall is likely due to the dearth of research targeting the aging process, and a lack of understanding surrounding what factors contribute to more positive outcomes for those entering old age. Without a broader comprehension of the aging process, many entering old age will likely continue to encounter the same challenges without the resources to improve their well-being.

Over the last twenty-five years, there has been a growing emphasis in the field of gerontology to examine issues related successful aging (Baker, 2014). In our emergent understanding, many have begun to see the necessity of creating a multidisciplinary approach to the aging process. Social, biological, and physiological aging do not occur independently from one another in the aging process, rather that process is made up of a combination and interaction of these factors (Stuart-Hamilton, 2006). However, most view the aging process from a purely biological standpoint, and services provided seek to promote physical health while generally ignoring other salient aspects that may contribute to successful aging. One aspect of aging that is associated with decline is sexuality and sexual health. The rate of sexual intercourse generally declines as individuals enter old age due partly to hormonal reasons, partly because of the preoccupying stress factors in other life domains that are occurring, and partly due to evolutionary reasons (Sheldon, 2015). Though strides have been made, many do not give the attention toward the sexuality and sexual health of older adults, arguably due to the natural decline that occurs. Even though sexual activity rates generally decrease during

the transition to old age, many studies have found that older adults continue to have sex well into their later years (Lindau, Schumm, Laumann, Levinson, O'muircheartaigh, & Waite, 2007). Sexuality has been linked to positive health and well-being in younger populations, and for sexual health to be reached and maintained, the sexual rights of all individuals must be protected, respected, and fulfilled (World Health Organization, 2010). Currently, older adults' sexual rights are largely overlooked, leaving the potential benefits to be gained from maintaining a healthy sex life unattained.

The sexual health of older adults, while capitalized on by pharmaceutical industries, is generally disrespected or disregarded by younger populations and health professionals due to ageist perspectives and limited knowledge of sexual health in old age (Simon, 2017). Negativistic portrayals of older adults have led to a reticence among such persons to seek treatment for sexual challenges due to shame and embarrassment (Taylor & Gosney, 2011). The stereotype of asexual elderly persons remains pervasive and, despite having little empirical grounding, has influenced policy and research agendas (Wylie, Wood, & McManus, 2013). Many health benefits which are associated with having a healthy and active sex life have the potential to support successful aging. The benefits of a healthy sex life found in younger populations could enhance the well-being of those transitioning into older adulthood if practitioners and policymakers had a better understanding of benefits of an active sex life in older adults. Some, but not all, of these benefits include: better relationships, lower levels of stress, better self-perceptions of happiness, lower blood pressure, fewer strokes, improved functioning of the immune system, improved cognitive aging, less physical decline, fewer heart attacks, lower risk for certain cancers, and overall longer life (Ahlskog, Geda, Graff-Radford, & Petersen,

2011; Onder, Penninx, Guralnik, Jones, Fried, Pahor, & Williamson, 2003; Grewen & Light, 2011; Hamilton, Rellini, & Meston, 2008; Leitzmann, Platz, Stampfer, Willett, & Giovannucci, 2004; Segerstrom, & Miller, 2004; Lindau & Gavrilova, 2010). While these benefits have been found to differ depending on gender (Miller & Bahn, 2013), both males and females have been shown to realize advantageous outcomes with a healthy sex life. However, targeted research is needed to determine how effectively different sexual activities support the well-being of our older population.

The lack of attention to these sexual health issues represents a disservice to the vast number of those entering older adulthood. Increased understanding of how sexual behaviors impact the well-being of older adults has the potential for improved physical, cognitive, and mental health. However, without research and services targeting this problem, it is less likely that substantial improvements will be realized. In analyzing research assessing how sexual behaviors influence psychological well-being and aging, the researcher attempted to combat the pervasive problem in our society and help to support future services and research to enhance the aging process for members of our current population and future generations.

Statement of Significance

Attempting to address the existing pervasive problem, there are several ways in which the current study will benefit not only our current aging population but future generations transitioning to old age. First, aging is a universal trait that is observed across gender, race, and ethnicities. It is an inescapable facet of human nature, which makes study of aging, specifically, a critical public health concern. As stated previously, dramatic medical advances have increased both the raw amounts, and overall

percentages, of older adults in societies worldwide. With an increase in longevity, the number of individuals suffering with age-related disease and disability has also increased. Longitudinal research is particularly important, as these types of investigations identify developmental change across time, making it possible to observe differences over time. Many studies have attempted to identify constructs which promote successful aging, however very few take investigate both internal and external elements of aging. To the researcher's knowledge, no research thus far has identified the psychological importance of healthy sexual activity in the transition to old age. In the current longitudinal study, sexual behaviors were assessed over time, identifying how the change in psychological well-being is affected by sexual behaviors in the aging process. These insights should contribute to advances across health domains including public, physical, and mental health.

One of the greatest public health successes in the last century has been increasing the number of years that people live, however the next challenge has been to make those added years happier and healthier (Anderson, Goodman, Holtzman, Posner, & Northridge, 2012). One way in which research can begin to contribute to healthier older years is by increasing understanding of sexuality in older adults. One challenge that those working in public health are trying to combat is disease in older adulthood, specifically sexually transmitted diseases. The diagnosis rates of human immunodeficiency virus (HIV) and other sexually transmitted infections (STIs) have increased significantly over the past ten years (Hinchliff & Gott, 2016), and among persons living with a sexually transmitted disease, it is estimated that more than half will be aged 50 years or older in the near future (Brooks, Buchacz, Gebo, & Mermin,

2012). Though sexually transmitted diseases are a cause for concern, older adults have been generally excluded from research related to STIs (Levy, Ding, Lakra, Kosteas, Niccolai, 2007). Additionally, there are generally a lack of education programs provided for the elderly population, let alone education programs targeting sexual health and practicing safe sex (Minichiello, Rahman, Hawkes, & Pitts, 2012). With an increased understanding of how sex behaviors impact the well-being of older adults, education around sex and sexual well-being in older adults should become more accepted, and potentially lead to a decreased rate of STIs in older adults.

It has been well documented that women generally have longer lifespans than men (Ginter & Simko, 2013; Eskes, & Haanen, 2007; Austad, 2006; Luy, & Gast, 2014; Seifarth, McGowan, & Milne, 2012). However, that does not necessarily mean that women are living well in their older age. In addition to supporting mental health, healthy sexual lives are also linked to decreased rates of physical disease and disability (Chao, Lin, Ma, Lai, Ku, Kuo, & Chao, 2011; Bach, Mortimer, VandeWeerd, & Corvin, 2013). In analyzing how gender and physical health impact the relationship that sexual behaviors have on psychological well-being in old age, there may be a way in which to target certain populations to support their aging process. Males and females often react to intervention differently, and having a better understanding of gender differences and health disparities in the transition to old age may improve services provided to the older populations.

Not only does the current study contribute to public health perspectives on increased education about sex in elderly, but it also contributes to public health in the realm of mental health and older adults. There has been an increased push to promote

public health and address depression and other mental health challenges in the older population (Centers for Disease Control and Prevention, 2009). The Centers for Disease Control and Prevention's (CDC) (2009) role in mental health in aging populations includes: collecting data to monitor the effect of depression on older adults, helping to assess state and local data, gathering evidence for effective community-based programs, and promoting evidence-based interventions. Though many strides have been made, the CDC has yet to address mental health among older adults through the lens of sexual well-being. In increasing the understanding of the impact that sexual well-being has on psychological well-being, public health centers should target mental health concerns in a more comprehensive manner by also taking into account the sexual health of those transitioning into old age.

Apart from a public health perspective, the current study should also help to promote healthcare professionals' treatment of sexual concerns in older populations. Physicians and different healthcare professionals are overwhelmingly the preferred source for health information for older adults (Mellor, Greenfield, Dowswell, Sheppard, Quinn, & McManus, 2013), which makes the promotion of safe and positive sexual well-being difficult (Hinchliff & Gott, 2016). Physicians have been shown to avoid discussing the topic of sexuality and sexual health with their elderly patients (Kuehn, 2008). Additionally, not only do healthcare professionals avoid asking older clients about their sexual well-being, but older clients are generally not willing to volunteer such information (Mellor et al., 2013). One of the main barriers that health professionals have reported in assessing sexual well-being in older adults was their own lack of motivation and confidence level in discussing the topic (Mellor et al.,

2013). Additionally, Hinchliff and Gott (2011) found that healthcare professionals found obstacles in asking about sex in older adults which related to assuming that sex was less important in old age, inadequate training, and limited knowledge of late-life challenges with respect to sexuality. In identifying how sexual health impacts the psychological well-being of older adults, healthcare professionals should realize the importance of discussing these issues with their patients and help to promote health sexual behaviors in older adult.

Lastly, the current study should help to combat one of the prevailing ageist perspectives that exists is society: that older adults are asexual. This incorrect belief impedes the ability for older adults to seek help from practitioners, as the stereotype is also pervasive among older adults themselves who feel shame and discomfort when confronting their own sexual challenges (Bodner, 2009). There is a growing interest in moving beyond the stereotype of older individuals as asexual actors, and in developing a critical research agenda for aging and sexuality (Marshall, 2011). In contributing to this agenda, the current study should help to promote a more positive outlook on sexual well-being both in older populations and also younger populations. This, in turn, should alleviate some of the stigma associated with sexuality in old age, and promote not only the sexual health of older adults, but their overall mental well-being as well.

Research Questions and Hypotheses

The following are the primary research questions, with accompanying hypotheses in italics below. Additional information on the rationale for these hypotheses is presented in Chapter Two.

1. How does psychological well-being change as individuals transition into older adulthood?

   1a. As individuals transition from middle adulthood to older adulthood, psychological well-being will increase.

   1b. As individuals transition from middle adulthood to older adulthood, psychological well-being will differ between males and females

2. How does sexual frequency and sexual satisfaction predict change in overall psychological well-being as individuals transition from middle adulthood to older adulthood?

   2a. Increased sexual frequency will be positively associated with positive change in overall psychological well-being in the transition from middle adulthood to older adulthood.

   2b. Increased sexual satisfaction will be positively associated with positive change in overall psychological well-being in the transition from middle adulthood to older adulthood.

3. How does personality predict change in psychological well-being as individuals transition from middle adulthood to older adulthood?

   3a. Extraversion, agreeableness, and openness will be positively associated with positive change in overall psychological well-being in the transition from middle adulthood to older adulthood.

   3b. Neuroticism and conscientiousness and will be negatively associated with positive change in overall psychological well-being in the transition from middle adulthood to older adulthood.

4. To what extent does gender and physical health moderate the relationship between sexual frequency and psychological well-being in the transition to older adulthood?

   4a. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and sexual frequency will be stronger in males than in females.

   4b. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and sexual frequency will be stronger in those who perceive themselves to have higher levels of physical health.

5. To what extent does gender and physical health moderate the relationship between sexual satisfaction and psychological well-being in the transition to older adulthood?

   5a. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and sexual satisfaction will be stronger in males than in females.

   5b. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and sexual satisfaction will be stronger in those who perceive themselves to have higher levels of physical health.

6. To what extent does gender and physical health moderate the relationship between personality and psychological well-being in the transition to older adulthood?

6a. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and extraversion, openness, and agreeableness will be stronger in males than in females.

6b. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and neuroticism and conscientiousness will be stronger in females than in males.

6c. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and extraversion, openness, and agreeableness will be stronger in those who perceive themselves to have higher levels of physical health.

6d. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and neuroticism and conscientiousness will be stronger in those who perceive themselves to have lower levels of physical health.

Theoretical Underpinnings

The current study is rooted in adult development and well-being. Adults continue to develop well into old age, and whether they continue to develop adaptively is rooted in both external (*i.e.*, health status) and internal (*i.e.*, personality) factors. Erikson (1968) provides an in-depth model of the psychosocial developmental processes that occur in middle and older adulthood, and how these processes interact with the internal and external self. In addition to Erikson's psychosocial development theory, the current study utilizes Martin Seligman's (2011) well-being theory as a theoretical framework. His well-being theory (2011) is based upon his previous model of Authentic Happiness which

points to several aspects of being that contribute to overall well-being. These theories help explain and support the current study which is anchored in the transition process into older adulthood and the processes which contribute to overall psychological well-being.

Erikson's Psychosocial Developmental Framework

Erik Erikson (1968) was one of the first developmental theorists to capture contextual and psychodynamic frameworks as integrated entities in the lifespan, showing how each individual life within both the larger external context of society and culture and within the smaller environments of family and relationships (Hoare, 2009). His framework highlighted the influential nature of contextual factors in one's internal and external self. Erikson (1968) proposed eight stages which are marked by a struggle between two opposing tendencies, both of which the individual experiences. The individual resolves the challenge associated with each stage through an interactive process involving both the inner psychological and the outer social influences (Miller, 2011). Successful resolutions establish the basic areas of psychosocial strength, whereas an unsuccessful resolution impairs ego development in a particular developmental area and negatively impacts the resolution of future struggles; thus, each stage in Erikson's theory represents a type of crisis (Cavanaugh & Blanchard-Fields, 2015). The sequence of stages in Erikson's theory is based upon the epigenetic principle, meaning that development is predetermined and our progress through each stage is in part determined by our success, or lack of success, in all the previous stages (Cavanaugh & Blanchard-Fields, 2015).

While Erikson's theory of psychosocial development provides the general framework, the current study is primarily rooted in individuals' transition from the seventh to the eight psychosocial stage. The seventh stage, generativity vs stagnation, represents the major conflicts of adulthood including parenthood and the midlife crisis (Erikson, 1968). Erikson (1963) originally described generativity as "an interest in establishing and guiding the next generation," (p. 103) which he asserted was largely completed through parenthood, though he stated that it could also include an individual's role in the community. He later expanded his definition of generativity to include challenges to prevent stagnation which revolved around a lack of interest or initiative and a sense of giving up (Erikson, 1993). If the individual successfully resolves the challenge of generativity, then a person is able to develop the basic virtue of trust. With trust, the next generation is facilitated, and the psychosocial strength of caring is obtained (de Medeiros, 2009). Following the epigenetic principle, the capacity of caring will serve the individual through the rest of their life.

Erikson (1963) designated old age – identified as over age 65 – as his eighth developmental stage. This stage concentrates on the resolution of ego integrity versus despair. A successful resolution of the eighth stage takes place when an individual can accept what has gone before as inevitable and satisfying, and can also accept without fear that death will occur probably in the not too distant future (Brown & Lowis, 2003). This resolution is how one achieves ego integrity, and the adaptive strength that is thought to emerge through the crisis of this developmental task is wisdom. In contrast, if a person feels that his or her life has been a failure in some way, and that it is too late to repair the mistakes that he or she has made in his or her life, then he or she will be filled with

despair (Brown & Lowis, 2003). Through the task of ego integrity versus despair, one arrives predominantly either at reconciliation and acceptance or at disappointment and despondence, and is seeking to balance life successes and disappointments to reach a compassionate, philosophical comprehension of the life as a whole (Hearn, Saulnier, Strayer, Glenham, Koopman, & Marcia, 2012). The challenges and perceived turning point that needs to be met in order to achieve ego integrity can cause a great deal of stress and anxiety for individuals. Successfully navigating these eight developmental stages and achieving a balance leaning toward ego integration is influenced by past developmental experiences, but it is by no means predetermined (Torges, Stewart, & Duncan, 2008).

Erikson's stage theory serves as a basis for the current study due to the study's developmental nature. Based upon his theory, participants of the current study are encountering the crisis of ego integrity versus despair as they enter into older adulthood. A successful resolution of this phase is indicative to what we understand as successful aging. Psychological well-being is paramount to successful aging and can be viewed as the internal self, working in conjunction with contextual factors. The model of psychological well-being that is conceptualized as the internal self is that founded by Ryff (1989b), who based her model of being well on a range of characteristics and perceptions. While Ryff conceptualized the scales for assessing psychological well-being, Martin Seligman, a pioneer of positive psychology, founded well-being theory, which constitutes the overall framework for the current study's quest of aging well and overall well-being.

Well-Being Theory

Martin Seligman has pioneered studies of happiness and well-being through his work with positive psychology. According to Seligman and Csikszentmihalyi (2000), positive psychology at the subjective level involves valued subjective experiences, at the individual level regards positive individual traits, and at the group level concerns the civic virtues and the institutions that move individuals toward better citizenship. With respect to positive psychology, Seligman first introduced Authentic Happiness Theory, which later evolved into Well-Being Theory due to inadequacies found within Authentic Happiness Theory (Seligman, 2011). Well-Being Theory asserts that no single measure can effectively define well-being, however there are several elements that contribute to it. Any element of well-being must have the following three components: it contributes to well-being, it is pursued for its own sake, and it is defined exclusively of the other elements of well-being (Seligman, 2011). Seligman (2011) defined five elements which include: engagement, positive emotion, meaning, accomplishment, and positive relationships. Engagement and positive emotion are hedonic, or subjective elements. Engagement identifies the way in which an individual participates with his or her environment, whereas positive emotion measures happiness and life satisfaction (Seligman, 2011). Meaning encompasses belonging and service to something that is regarded as bigger than the self, while accomplishment brings the positive feelings associated with achievement (Seligman, 2011). Lastly, positive relationships are integral to the theory, because Seligman (2011) asserts that there are very few positive aspects which are found in solitary living. Seligman believed so firmly in the power of relationships that he asserted that "other people" is the cornerstone of positive

psychology, and that high points in life occur around other people (Seligman, 2011). In support of the theory's elements, Seligman (2011) also identified twenty-four strengths and virtues that help to bolster and sustain the five elements of overall well-being. The overall goal of well-being theory is to increase the amount of flourishing, which is a state in which individuals experience positive emotions and functioning (Seligman, 2011). In order to achieve flourishing, an individual must fully develop those attributes that exhibit character strengths and virtues (Seligman, Steen, Park, & Peterson, 2005).

Well-being theory is the foundation for the current study in that it identifies the root of the overall outcome. It does not focus on happiness, but well-being, which is a higher level of functioning than hedonic perceptions of being happy. The psychological well-being model (Ryff, 1989b) goes together with well-being theory, and closely resembles the constructs put forward by Seligman to identify a more self-actualizing way of life. Elderly individuals are often perceived as having lived their lives, and since they have already experienced life and are in their later years, many do not consider their well-being. Utilizing Seligman's theory as a foundation for the study, the researcher attempted to analyze the well-being of individuals in their later years, how it changes, and how different constructs influence it.

Methodology

The research question one was analyzed using a two-way mixed effects ANOVA, and all subsequent research questions were analyzed through a series of hierarchical regressions. For the first question, a two-way mixed effects ANOVA was used to determine whether overall psychological well-being changed between 1993 and 2011, and whether gender impacted overall psychological well-being. The two-way mixed

effects ANOVA allowed for the researcher to assess the influence of gender both when accounting for time and when ignoring time. All remaining hypotheses were completed using hierarchical regressions. Given that the current study assesses participants over time, the first model in all hierarchical regression models was psychological well-being at 1993. Controlling for psychological well-being in 1993 on the dependent variable of psychological well-being in 2011 removes the variance that psychological well-being accounts for in 1993, and identifies the change between time points. The second model added employment, net worth, and educational attainment as covariates. The remaining models determined the extent to which sexual frequency and sexual satisfaction (question two) and personality traits (question three) predict change in overall psychological well-being, and also how gender and physical health moderate these relationships (questions four through six). Interaction variables were generated for the moderation analyses, which were: *sexual frequency x health, sexual frequency x gender, sexual satisfaction x health, sexual satisfaction x gender, openness x health, openness x gender, conscientiousness x health, conscientiousness x gender, extraversion x health, extraversion x gender, agreeableness x health, agreeableness x gender, and neuroticism x health, and neuroticism x gender.*

Limitations and Delimitations

Though the current study offers insights about the relationship among sexual behaviors and personality in the aging process, several limiting factors of the study were present. First, there were practical limitations that were rooted in the longitudinal nature of the current study. Some of these included measurement error due repeated measures and constraints set forth by the University of Wisconsin Survey Center. Additionally,

attrition was a limitation due to various reasons including maintaining contact, sustaining motivation, and death. Survey measures were self-report, which creates the possibility that responses were altered toward more socially desirable responses, or were inaccurate due to perception of the participants.

Missing data was a cause for concern, since the study was impacted by the need for listwise deletion. Though the sample size was large enough for adequate power, the amount that needed to be extracted was a limitation to consider. Additionally, the participant sample was representative of White, non-Hispanic American men and women with at least a high school education. The lack of minority representation limits the amount of generalizability of the results. Lastly, it is unlikely that research regarding psychological well-being would be comprehensive enough to control for the array for factors that would be potentially influential. Thus, it is uncertain how the results of the study may have been impacted by other potentially significant factors outside of the chosen covariates.

Key Terms

Definitions of key terms utilized throughout the current study are provided below in order to decrease confusion and facilitate clarity.

Successful Aging

Successful aging has often been regarded to include three main components: "low probability of disease and disease-related disability, high cognitive and physical functional capacity, and active engagement with life" (Rowe & Kahn, 1997, p. 433). Successful aging is viewed as more of a maintenance of functional capacitates than

an absence of disease (Rowe & Kahn, 1997), and is most fully represented when combined with an active engagement with life.

Baby Boomers

Refers to a cohort of individuals born after World War II, between 1946 and 1964, which was the highest birthrate in U.S. history (Barnes, 2007). The Baby Boom generation consists of approximately 76 million Americans; and are viewed as a cultural subset generally thought to have grown up in a privileged era due to the plethora of government subsidies in post-war education and housing, and increase in economic affluence (Barnes, 2007).

Eudaimonia

The perspective which informs Ryff's Psychological Well-Being Scales (Ryff, 1989b). Founded in Aristotle's *Nichomachean Ethics* (1925), eudaimonia was through to be highest human good and a striving to achieve that best that is within us. Eudaimonia has been thought to be an alternative approach to well-being in that happiness is not the highest form of human good, but activities of the soul that are in accord with virtue (Ryff & Singer, 2006). Eudaimonia means to do the following: first, to know yourself, and second, to become what you are (Ryff, 2014). This first requires understanding your own unique talents and then working to bring them to fruition (Ryff, 2014).

Psychological Well-Being

Psychological well-being is the simultaneous absence of debilitating elements of functioning, (i.e. depression, anxiety, fear, and anger) and the presence of enabling elements (i.e. meaning, positive emotions, healthy relationships, environmental mastery, self-actualization, and engagement) (Adler, Unanue, Osin, Ricard, Alkire, & Seligman,

2017). It considers a broad spectrum of constructs than what is traditionally believed to encompass happiness (Seligman & Csikszentmihalyi, 2000; Seligman, 2011), and integrates several theorists perspectives on what it means to have positive functioning (Ryff, 1989b).

Sexual Behaviors

Sexual behavior refers to a wide-ranging spectrum of behaviors which display human sexuality (Wang, Depp, Ceglowski, Thompson, Rock, & Jeste, 2015). Such behavioral expressions include both biological elements and cultural influences, and revolves around some sort of physiological sexual arousal (Simon, 2017). Sexual behavior ranges from solitary acts to partnered sex, and can also involve behaviors aimed at arousing desire or enhancing sexual experiences (Simon, 2017).

Sexual Frequency

The rate at which individuals engage in sexual activity with a sexual partner.

Sexual Satisfaction

The physical pleasure and gratification that one derives from sexual experiences.

Personality

Personality is a complex system of characteristics and mannerisms that work together with psychological mechanisms to help to explain and predict an individual's behavior (Funder, 2013). McCrae and Costa (1987) founded one of the most utilized personality frameworks – the Five Factor Model – which is rooted in the understanding that an individual's personality can be evaluated based upon the five factors: openness, extraversion, conscientiousness, agreeableness, and neuroticism.

Gender

The biological sex of individuals, defined in the current study as either male or female.

Physical Health

The overall physical condition of the body at a given time, which includes the rate of disease or abnormality, the soundness of the body, and the state of ideal well-being and functioning the way in which the body was designed to function (Kurtus, 2017).

Chapter II: Literature Review

This chapter reviews the literature related to this study's research questions concerning the transition to old age and how sexual behavior and personality relate to change in psychological well-being. The chapter first presents a brief overview of old age and the aging process with an analysis of how the dominant perspective on these matters has shifted from a view of decline to one of success. This review includes an introduction into the challenges associated with the transition to old age, as well as a brief description of the construct of successful aging. The chapter next provides an overview of well-being, including the different available definitions and measures, as well as how previous researchers have generally found well-being to impact different aspects of old age. The chapter then describes and discusses sexual behaviors, including how sexual functioning is impacted by the aging process, how sexual behaviors may present differently in older persons, and what is currently known about sexual behaviors and their association with well-being. Lastly, the chapter discusses personality within the Big Five personality model. Accordingly, the chapter presents current research regarding the stability of personality over time, as well as previous research regarding personality and well-being. This chapter concludes with some thoughts on inferences for the current study.

Old Age

In its simplest form, aging is a biological process which occurs with the mere passage of time (Crimmins & Vasunilashorn, 2015); however, the transition into old age encompasses much more than simply the physical changes that occur as a body ages. In our society, old age is generally believed to begin at the age of 65. Congress established

this framework when it chose 65 as the age of normal retirement under the Social Security Act of 1935. At that time, average life expectancy was approximately 60 years old, and policymakers believed that most workers would not live for an extended period of time after retirement. Thus, it was expected that retirees would generally only receive benefits for a minimal amount of time (Workplace Flexibility, 2010). Although the retirement age has become the topic of some debate in recent society, in research, "old age" has become operationally defined as individuals aged 65 and older. It has also become consistently used in public discourse as the cutoff point between middle adulthood and old age.

Using 65 as the cutoff for old age, those transitioning into older adulthood are rapidly increasing in number. In general, people are living longer; in 2012 people over the age of 65 accounted for 13.7% of the U.S. population, and by 2030 the number of individuals in that age range is projected to increase to 20.3% (Ortman, Velkoff, & Hogan, 2014). The Administration on Aging (2015) found that those who had lived to age 65 in 2014 would have an average continued life expectancy of 19 years, revealing the distinct possibility that such individuals might enjoy additional years of engagement with life than did the members of previous generations after reaching that same milestone. Globally, the number of persons aged 60 and above is expected to more than double by 2050 and more than triple by 2100, increasing from 901 million in 2015 to 2.1 billion in 2050 and 3.2 billion in 2100 (United Nations Development Division, 2015). Although these final years often bring about many challenges, there is also great opportunity to meet them with success. Accordingly, it is imperative for researchers to

engage in more studies geared toward older adults in order to meet the demand for the growing population and to promote successful aging as best as possible.

Transition to Old Age

When individuals enter the later years of their lives, they often experience several different significant major life events, and elderly persons often face such milestones with limited resources (Ryff, 2008). Additionally, these life-altering transitions frequently happen in a relatively short period of time. With their physical difficulties becoming apparent, many elderly begin to face chronic illness and physical impairment that they have not had to address in their younger years. Steverink (2014) found that medical comorbidity, disability, cognitive decline, and reported pain were some of the most challenging aspects of aging that individuals encounter as they transition to old age. Not only do more illnesses arise in the elderly, but the body is not as able to heal itself as readily as it was in its younger years (Fontana, Kennedy, Longo, Seals, & Melov, 2014). Moreover, if an elderly individual experiences cognitive decline, it is most likely irreversible (Cheng, Chow, Song, Edwin, Chan, Lee, & Lam, 2014). However, physical change and decline is not the only transition that individuals encounter as they transition into old age.

The psychosocial challenges that arise in the elderly population are widespread, and can cause a diminished sense of well-being (Sutipan, Intarakamhang, & Macaskill, 2017). Some of the adversities that elderly individuals encounter include economic impoverishment, isolation, relocation, burdening family members, and bereavement (Alexopoulos, 2005; Orth, Trzesniewski, & Robins, 2010; Löfqvist, Granbom, Himmelsbach, Iwarsson, Oswald, & Haak, 2013; Spahni, Morselli, Perrig-Chiello, &

Bennett, 2015; Silverstein & Giarrusso, 2010). As such, this specific transitionary period holds significant diverse challenges, and in addition to the challenges faced many are also facing their own mortality. Increased attention has been geared toward improving social and psychological functioning in older adults, as this functioning has been shown to positively interact with and influence an individual's physical health and mortality (Holt-Lunstad, Smith, & Layton, 2010). As age-related changes and losses interact and occur across many different domains, the transition into old age may seem bleak and result in self-reinforcing spirals of change (Steverink, 2014). The multifaceted interplay of diverse life domains and intersecting influences often holds true for the entire lifespan, but seems to be accelerated in later life (Hawkley & Cacioppo 2007). This process is one of the key points in Erikson's (1968) theory, which notes the struggle between internal and external psyches that takes place in the transition to each new developmental task. Older adults already have a diminished capacity to compensate for certain losses, however this confluence of changes may compound the process and lead to declines in well-being. A decline in well-being would suggest that the eighth stage was not successfully resolved, and thus ego integrity was not achieved (Erikson, 1968). Whether an elderly person's transition includes changes in physical, mental, social, or a combination of the three, there are serious implications. Given that the elderly population is growing at such a rapid rate, difficulties associated with these late-life transitions are becoming a macro-level problem (Christensen, Doblhammer, Rau, & Vaupel, 2009).

Although the many challenging transitions that individuals encounter as they enter old age are significant, many recent studies have also found that older adults experience

increased levels of well-being (Blanchflower & Oswald, 2008; Jeste, Savla, Thompson, Vahia, Glorioso, Martin, 2013; Lang, Llewellyn, Hubbard, Langa, & Melzer, 2011; Stone, Schwartz, Broderick, & Deaton, 2010) as compared to their younger years. Despite encountering many significant challenges, they may also continue to develop in a positive and adaptive way in the later stages of their lives. This positive manner of development has been coined as the "paradox of aging," *i.e.*, that despite aging-associated loss of functioning and a decline in physical health, well-being and happiness increases in the transition to old age (Jeste & Oswald, 2014). Increased levels of well-being and happiness in old age would denote that individuals have successfully navigated the crises of old age and despair, and have achieved ego integrity (Erikson, 1968).

Many researchers are attempting to target and optimize this positive manner of development in later years. As in Erikson's (1968) framework, an individual encounters a crisis in old age, and has the opportunity to either resolve that crisis and be filled with wisdom or be filled with despair. New frameworks for understanding aging have shifted from models of decline and loss to models that emphasize positive change and development, while also acknowledging the understandable likeliness of declines (Kahlbaugh & Huffman, 2017). Research on successful aging, specifically, has highlighted and attempted to understand how older adults can remain happy and healthy for as long as possible.

Successful Aging

Successful aging refers to relatively high levels of cognitive, physical, and social functioning, and avoiding disease and disability (Baltes, & Baltes, 1993; Rowe & Kahn,

1997; Baltes, & Smith, 2003; Stevernik, 2014). Studies have attempted to understand what aspects of aging contribute to subjective well-being and possibly foster continued positive development in old age. The field of positive psychology, in particular, has identified several different potential strengths that increase with age including wisdom, a sense of relaxation, and new social and familial relationships (Seligman, 2011). Studies in successful aging have thus far been overwhelmingly rooted in subjective well-being, which is defined as a low probability of disease and/or disability, high cognitive and physical functioning, and active engagement with life (Rowe & Kahn, 1997). While relatively few studies exist on successful aging, findings have consistently shown that those with higher levels of well-being have a significantly lower risk of disability and mortality (Cho, Martin, Poon, & Georgia Centenarian Study, 2014; Collins, Goldman, & Rodríguez, 2008). Successful aging implies that an individual is able to manage the interplay between different life domains productively, or, through the lens of Erikson (1968), is able to successfully resolve the crisis of old age.

There may be specific antecedents and factors that contribute to successful aging and increased well-being in older adults. Some psychosocial factors have been found to be protective factors for successful aging including: religion, social support, and personality factors (Aldwin, & Igarashi, 2015). Successful aging studies have generally been rooted in subjective well-being, which may blur conceptual differences between happiness and satisfaction; however, recent studies have begun to study successful aging through a eudaimonic (or meaning-related) framework (Aldwin & Igarashi, 2015). Eudaimonia is the foundation of an arguably more robust and comprehensive measure of well-being: psychological well-being. Identifying successful aging through a

psychological well-being approach may uncover more nuanced indicators that subjective well-being does not address, and provide a broader view of success in old age.

Psychological Well-Being

Throughout history, philosophers, researchers, theorists, and other professionals have attempted to understand what constitutes having a happy life. They derived two rules of thought – hedonism and eudaimonia – to help explain how one attains happiness and well-being. The goal of hedonism is to experience the maximum amount of pleasure, while the goal of eudaimonia is to achieve optimum human functioning and self-realization (Ryff, 2008). From these perspectives, subjective well-being (hedonism) and psychological well-being (eudaimonia) were founded. Where the hedonic tradition focuses on positive experiences and emotional components of positive mental health, the eudaimonic tradition focuses on a fulfillment of human potential and meaning in both individual life and social life to fully encapsulate psychological well-being (Lamers, Glas, Westerhof, & Bohlmeijer, 2012). The eudaimonic principles of psychological well-being are also found in Seligman's (2011) well-being theory, which identifies aspects of functioning which go beyond happiness. Much like psychological well-being, Seligman (2011) believed that no single measure could effectively define well-being, and that the goal should be to develop several aspects of functioning to contribute to a more positive being.

One of the most influential models within the eudaimonic tradition is that of psychological well-being developed by Carol Ryff (1989a; Ryff & Singer, 2008). Beginning in the 1980s, considerable research began to flourish around subjective well-being, which was often based upon reports of satisfaction, happiness, and positive

affect. Psychological well-being was largely ignored, and meager information existed to identify that of which psychological well-being consisted. Ryff (1989b) proposed a model of psychological well-being that attempted to address what she believed was a well-rounded approach to overall psychological well-being. In this model, Ryff (1989b) integrated and operationalized points of convergence in research by mental health psychologists (e.g., Marie Jahoda, Birren, and Frankl), developmental psychologists (e.g., Erikson, Jung, Neugarten, and Bühler), personality psychologists (e.g., Allport), and humanistic psychologists (e.g., Maslow and Rogers).

Through this integration, Ryff (1989b) identified six theory-based indicators of positive human functioning that were consistent with a eudaimonic perspective of well-being: purpose in life, autonomy, personal growth, environmental mastery, positive relationships with others, and self-acceptance. Purpose in life refers to feeling as though life has meaning and direction. Autonomy means making decisions independently and self-regulating one's own behavior, and it encompasses viewing the self as living in accord with personal convictions (Ryff, 1989a). Personal growth is the extent to which individuals are making use of their potential and talents, as well as the need for continued development of one's potential (Ryff & Singer, 2006). Environmental mastery is the ability to create surroundings that are compatible with one's needs and the capability to manage life situations (Ryff & Singer, 2006). Positive relationships with others refers to feeling love and affection for others and the depth of connection and attachment felt toward significant others (Ryff, 1989b). Lastly, self-acceptance encompasses a knowledge and recognition of the self, accepting both positive and negative attributes (Ryff & Singer, 2006). Ryff (1989b) later generated an assessment, the Psychological

Wellbeing Scale, to measure well-being based upon the aforementioned dimensions, with higher scores indicating greater well-being.

Since its development, psychological well-being has been utilized as a construct for research in a broad area of specializations and has been shown to be predictive of a large range of important life outcomes. Ryff (1989b) has shown that the dimensions of psychological well-being are positively associated with life satisfaction, affect balance and internal locus of control, and are negatively related with depression and external locus of control. More recent studies have further investigated psychological well-being in older populations, attempting to better understand how it impacts successful aging or how it is altered in old age. Developing a better understanding of psychological well-being in older adults has become an area of considerable interest to help improve the aging process and better understand what contributes to successful aging.

Psychological Well-Being and Old Age

Ryff's (1989b) model of psychological well-being was developed with an intentional focus on well-being across the lifespan, incorporating ideas of developmental theorists such as Erikson (1959), Neugarten (1973), and Buhler (1935). Having a lifespan perspective, the model is particularly significant in assessing well-being in the transition to older adulthood. Many believe that the process of growing older and gaining life experience bolsters overall psychological well-being, and thus conclude that older adults should have the highest levels of psychological well-being compared to all other age ranges (Ryff, 2008). However, many others typically associate aging with multiple losses and decline, concluding that it is particularly difficult for elderly individuals to increase, or even maintain, their psychological well-being (Gana, Bailly, Saada, Joulain,

& Alaphilippe, 2013). Several studies have attempted to study the aging process through the construct of psychological well-being and to analyze how psychological well-being impacts different aspects of aging. Given its central role in producing successful societies (Dambrun & Ricard, 2011), further research is needed to identify which factors contribute to psychological well-being, and how these factors can be utilized to promote well-being in those encountering old age.

Maroof and Khan (2016) studied developmental change in psychological well-being in adulthood. In comparing psychological well-being scores with participants' ages, the results indicated that the individuals' levels of psychological well-being, both as individual dimensions and overall well-being scores, changed significantly over time (Maroof & Kahn, 2016). Based upon their results, they concluded that as the average person ages, his or her psychological well-being increases and is higher than that of the average younger person. While Maroof and Kahn (2016) helped to further investigate the relationship between psychological well-being and age, their oldest participants were 50 years old. Additional research is necessary to investigate the process of psychological well-being in aging adults older than 50, especially those surpassing 65 years of age, and the constructs which either contribute to psychological well-being or hinder their successful aging.

Investigations of psychological well-being in older adults have often included constructs of disability or disease, as physical decline is an inevitable characteristic of aging. Studies have conclusively shown a positive relationship between overall well-being and physical health. Friedman and Ryff (2012) took a biopsychosocial approach in a study of age-related diseases by examining correlates of psychological well-being with

respect to having multiple chronic conditions. Their findings indicated that well-being declines as the number of chronic conditions increases, and that disease is a significant predictor of age related declines in well-being (Friedman & Ryff, 2012). Ryff, herself, later discussed the relationship that psychological well-being has to physical health, and the advances that eudaimonia has had on connecting physical health to underlying biological regulation (2014). She conducted a review of 350 publications utilizing her psychological well-being scales and found that aspects of well-being, most notably personal growth and purpose in life, have been linked to better physical health and reduced biological risk of disease (Ryff, 2014). This research furthers our understanding of how psychological well-being is influenced by health and disability, and thus studies must account for health status when forming conclusions about overall well-being.

The impacts of mortality and increased lifespan have also been shown to be related to psychological well-being. Hill and Turiano (2014) found that the specific dimension of purpose in life predicts greater longevity in adulthood, and that having a direction in life and a strong purpose continues to result in meaningful reductions in the risk of dying. Similarly, cognitive health has been shown to be positively related to psychological well-being in older adults. Boyle, Buchman, Barnes, and Bennett (2010) analyzed one of the most feared consequences of aging: Alzheimer's disease. Purpose in life was associated with substantially reduced risk of Alzheimer's disease, with participants in the 90th percentile on purpose in life being approximately 2.4 times less likely to develop the condition than participants with lower scores (Boyle et al., 2010). A later study conducted by Han and Shibusawa (2015) investigated various dimensions of health in elderly Chinese individuals, including cognitive status, and how they relate to

psychological well-being, and found a negative relationship between psychological well-being and lower levels of cognition. These results further show the significant impacts that psychological well-being have in older adults, and the possible impacts that positive psychological well-being has on both physical and cognitive health.

Countless studies and statistics have indicated that negative mental health symptomology accompanies old age. Even though older adults have some of the highest rates of depression and suicide compared to other age ranges (Taylor, 2014; Erlangsen, Stenager, & Conwell, 2015), studies have shown that positive psychological well-being is positively correlated to mental health in the elderly. Homan (2016) explored the relationship between psychological well-being and self-compassion in older adults, and whether this relationship mediated the association between physical health and levels of anxiety and depression. They found that psychological well-being and self-compassion were positively correlated in older adults, and that higher levels of psychological well-being acted as a buffer against the negative impacts that physical health problems can have on depression and mental health (Homan, 2016). Lamers, Westerhof, Glas, and Bohlmeijer (2015) were also interested in the impacts of psychological well-being on mental health. They conducted a longitudinal study analyzing the bidirectional relationship between positive mental health and psychopathology. Participants were ages 18-88, and results showed that high levels of psychological well-being acted as a protective factor against mental illnesses and psychopathology as individuals age (Lamers et al., 2015). Accordingly, psychological well-being seems to act as a protective factor against the mental health decline that older adults may otherwise experience.

While the studies have found the positive impacts that higher levels of psychological well-being has on different aspects of functioning, this may vary by gender. Gender differences have been of particular interest to researchers in the conceptualization of psychological well-being due to previous conflicting findings on the influence of gender on well-being (Perez, 2012; Khanbani, Aghaee, & Parvar, 2014). Understanding the relationship between gender and well-being may be necessary to further our knowledge on how psychological well-being is constructed and maintained in the aging process.

Gender Differences in Psychological Well-Being

Studies on gender differences are prevalent across many dimensions of research, and these differences have a notable influence on a range of outcomes including depression and mental well-being (Madden, 2010; Parker & Brotchie, 2010), physical health and rate of disease (Miller & Bahn, 2013), rates of addiction (Becker, McClellan, & Reed, 2017), and academic achievement (Voyer & Voyer, 2014). It is unsurprising that research has also supported the existence of gender differences in relation to well-being, however findings have been inconsistent and contrasting. As with previous studies, measures of both psychological and subjective well-being have been utilized to study the impact of gender on well-being, and while subjective well-being measures tend to point to the same findings, studies in psychological well-being have not.

Although most research analyzing gender and well-being has not emphasized older adults, researchers Pinquart and Sörensen (2001) conducted a study which highlighted well-being and gender in old age. Interestingly, although they highlighted psychological well-being in the title of their work, they only studied assessed levels of

subjective well-being. Additionally, their sample consisted of "at least some" participants over the age of 60, with a mean age of 55 years old (Pinquart & Sörensen, 2001, p. 198). Researchers found that older women had lower subjective well-being and lower levels of self-esteem than older men, and these differences were more significant in older participants than younger participants (Pinquart & Sörensen, 2001). In a later study, González-Carrasco, Casas, Malo, Viñas, and Dinisman (2017) analyzed Spanish adolescents from a developmental perspective. Their study assessed adolescents twice within a year. They found that again, females had lower levels of subjective well-being, and also that their lower levels of well-being were stable across time (González-Carrasco et al., 2017). While the difference observed between men and women was significant, it was very small, and of little practical significance. These studies both highlight that women tend to have lower levels of subjective well-being across age ranges, even though some differences were shown to be minimal. The way that heritage, culture, and social position contribute to the development of women of different backgrounds may contribute to this divergence between genders (Nguyen, Wong, Juang, & Park, 2015). While these studies are generally consistent, studies on gender and psychological well-being are not.

Recent studies have directly examined gender differences based upon Ryff's (1989b) model of psychological well-being. Khanbani et al., (2014) were interested in gender-related differences in psychological well-being among married individuals in Iran. They analyzed differences across five of the six dimensions, not including purpose in life, and found that gender differences existed within three of the five dimensions studied: positive relationships with others, environmental mastery, and personal growth

(Khanbani et al., 2014). Specifically, women had lower levels of well-being among these dimensions than men. These results may be influenced by the cultural implications of a woman's role in marriage in Iran, however results still indicated that gender was influential in psychological well-being.

Li, Kao, and Wu (2015) were also interested in differences in gender between Ryff's (1989b) six eudaimonic dimensions of well-being, and analyzed adults though factorial invariance tests. Their findings indicated that women had significantly more environmental mastery and less autonomy than men (Li et al., 2015). Furthermore, the correlation of autonomy and positive relations with others was lower for men than for women, and the correlation of environmental mastery and self-acceptance was higher for men than for women (Li et al., 2015). While these results are not consistent with the aforementioned study, they continue to point to important differences between men and women. However, these differences have not always been found.

In a study examining gender differences in psychological well-being in flood victims, Salleh and Mustaffa (2016) analyzed individuals living in temporary shelters following a flood disaster. They assessed these individuals based upon their overall psychological well-being, as well as Ryff's (1989b) six individual dimensions. Researchers found that no significant differences existed between males and females neither in terms of their overall psychological well-being, nor in the individual dimensions (Salleh & Mustaffa, 2016). This study suggests that gender does not influence well-being, and suggests that further information is necessary analyzing how gender differences are manifested in psychological well-being. Through previous studies, we can see that gender may play a role in psychological well-being, however its

role is has been inconsistent, and thus is not always clearly evident. These findings suggest that while gender should be assessed, the role of gender and how gender differences manifest may be better understood within particular behaviors that influence psychological well-being.

Psychological well-being is a complex construct shown to be influenced by many factors in life. Although research on psychological well-being generally focuses on younger populations, it has been shown to be highly influential in older age. It is clear that further research is needed on older adults' psychological well-being, specifically into inquiries identifying behaviors that promote their well-being. One aspect of psychological well-being with respect to older adults that has yet to be studied is sexual behavior. Sex is an integral aspect of individuals' lives, and is understood as a main part of a healthy and inspiring lifestyle; however existing research leaves sex and sex behaviors largely unaddressed in older age groups (Merghati-Khoei, Pirak, Yazdkhasti, & Rezasoltani, 2016). The role of sex and its relation to psychological well-being was a primary focus of this current study. In analyzing sexual behavior in older adults, this current study further developed our understanding of psychological well-being and overall successful aging among those transitioning to old age.

Sexual Behavior

Although recognized as a fundamental driving force to human existence (Kalra, Subramanyam, & Pinto, 2011), human sexuality and sexual behaviors are commonly misunderstood and, particularly in older adults, neglected. More recently, however, researchers have attempted to shed light on some of the issues surrounding sexuality in old age. In general, ageist perspectives exist within society which causes many to frown

upon, or even recoil from, understanding that elderly persons often have an active and healthy sexual lifestyle. Such assumptions stem from robust research documenting sexual decline in old age and asserting that elderly individuals no longer engage in sexual behaviors. While much research has been conducted on sexuality and sexual behavior in adolescents and adults, there is a general dearth of studies exploring the nature of sexuality and sexual behavior in older age groups (Wang et al., 2015). Studies that have been conducted on sex in older age groups have generally focused on sexual functioning and decline through a medical model (Diehr, Thielke, Newman, Hirsch, & Tracy, 2013). Those inquiries that do focus on the health benefits of sex and sexual well-being often concentrate on individuals under the age of 50. This too may be due to the ageist view that older adults are asexual.

Combating this notion that older individuals do not engage in sexual behaviors, recent research has demonstrated that older adults remain interested in, and engage in, sexual activity that they find pleasurable (Lindau et al., 2007). Additionally, the American Association of Retired Persons (AARP) conducted a survey that indicated that more than 80% of participating men and more than 62% of participating women under 70 rated a ‘‘satisfying sexual relationship’’ as important to their quality of life (2010). Not only are older adults engaging in sexual activity, many also believe that it is important to their well-being. Even still, very limited research has been conducted into better understanding how sexual behavior is associated with aging and other life domains, specifically psychological well-being. The influence of aging on sexual functioning cannot be denied. In assessing how sexual behavior impacts transitioning to old age, an understanding of how aging impacts sexual functioning must first be established.

Impacts of Aging on Sexual Functioning

As stated previously, one of the most impactful changes that is encountered in the transition to old age is disease and disability. Unsurprisingly, age related changes also impact the sexual functioning of those entering old age. DeLamater and Karraker (2009) conducted a review of literature on sexuality and aging, attempting to determine how increased age impacts overall functioning. They found that in females, the main changes associated with aging included vaginal dryness and atrophy, and in males there were slower erections, less firm erections, and fewer orgasms (DeLamater & Karraker, 2009). Additionally, they found that female participants reported that as they aged they developed less desire to partake in sexual intercourse, took longer to become aroused, and had less satisfying orgasms (DeLamater & Karraker, 2009). Although these physical challenges do not seem to impact the frequency of sexual behaviors in older adults, it may impact the pleasure which is derived from sexual experiences.

In older adulthood, many encounter illness and disability as a natural process of aging, which may also impact sexual functioning. However, DeLamater and Moorman (2007) surveyed a large cohort of older adults on their sexual functioning in relation to illness and they found that illness does not necessarily limit the amount of sexual activity. They asserted "diagnosed illnesses and their associated treatments exerted surprisingly little influence on frequency of sexual behavior" (DeLamater & Mooman, 2007, p. 21). Additionally, they found evidence that was contrary to the belief that illnesses largely influence a decline in sexual functioning. Instead, DeLamater and Mooman (2007) found that medical challenges were associated with a relative maintenance of sexual behavior, and did not contribute to sexual dysfunction or distress.

These findings were completely contrasted by Lindau and Gavrilova (2010), however, who also surveyed older adults on their health and sexual functioning. According to their results, men and women who reported higher levels of health were more likely to be sexually active than their counterparts who reported lower levels of health (Lindau & Gavrilova, 2010). Lindau and Gavrilova (2010) also found that of those participants who were sexually active, higher levels of health were significantly associated with both frequency and interest in sexual activities. Although findings about the impacts of aging on sexual functioning in older adults are inconsistent, it seems clear that the physical changes that older adults encounter often play a role in the sexual functioning of older adults. Understanding this relationship, physical health and disabilities must be taken into account when studying older adults and their sexual behaviors. With age-related changes in sexual functioning, it seems necessary to also have a better understanding of sexual behavior in older adults, and how such behavior can appear differently from younger populations. Aging and disability impacts sexual functioning; thus, it would seem unsurprising that sexual expression may also be impacted by age-related decline. Understanding these differences is crucial to understanding older adults' sexual health and behavior.

Sexual Behavior in Old Age

The amount of research targeting sexual functioning in older adults is staggering, with biomedical studies identifying the negative impacts that disability, illness, medication, or medical conditions have on sexual behavior. With much of the research highlighting declines in sexual functioning, many researchers overlook the possibility that sexual behavior can appear differently in older adults. Ginsberg, Pomerantz, and

Kramer-Feeley (2005) were interested in exploring this difference, and attempted to fully describe the range of sexual behaviors in which older adults engage and to also identify the degree to which members of this population find these behaviors satisfying. Their results identified that older adults were interested in maintaining their sexual activity and showed that elderly sexual expression came in the form of touching and/or holding hands, embracing and/or hugging, kissing, mutual stroking, masturbating, and intercourse (Ginsberg et al., 2005). Overall, the majority reported that they had physical and sexual experiences such as touching/holding hands, embracing/hugging, and kissing with some degree of regularity, while most of the participants did not experience mutual stroking, masturbation, or intercourse (Ginsberg et al., 2005). Interestingly, the majority of participants were interested in engaging in the types of sexual experiences in which they were likely to engage, and did not show interest in experiences such as mutual stroking, masturbation, and intercourse (Ginsberg et al., 2005). This study's participants were residents of a subsidized independent-living facility in New Jersey, so results may not be generalizable to older adults of different living and socioeconomic circumstances, however results highlight not only that older adults prefer a different method of sexual expression than younger persons, but also the types of sexual behaviors that older adults were not interested in. Some believe that older adults do not engage in intercourse due to disability, not a lack of desire; however, Ginsberg et al. (2005) showed that older adults may also simply lose interest in more active forms of sexual behavior.

In later research, DeLamater (2012) attempted to identify typical patterns of sexual expression in older adults through a review of recent literature. DeLamater initially examined studies of individuals over age 60; however, due to the dearth of

research, he had to broaden his scope to include those over age 50 (2012). While it was clear that participants in higher age ranges, such as those individuals over age 70, had lower rates of sexual behavior, he identified that older adults continue to engage in sexual behaviors including sexual intercourse, masturbation, and oral sex (DeLamater, 2012). Among participants aged 60 and above, over half were still engaged in sexual intercourse, specifically with males experiencing more sexual intercourse than females (DeLamater, 2012). Although it is important to be aware of other means of sexual expression, it is clear that older adults continue to engage in sexual behaviors congruent with the general understanding of what sexual behavior entails (i.e., intercourse and masturbation).

Most recently, Santos-Inglesias, Byers, and Moglia (2016) specifically analyzed sexual well-being in older men and women aged 65 and older in regards to frequency, types of activity, interest, and satisfaction. Sexual well-being encompassed not only how elderly individuals engaged in sexual behaviors, but also how they felt toward sexual behavior both physically and emotionally. Studied sexual behaviors included three non-genital forms of sexual activity including kissing, cuddling, and hugging, as well as four genital sexual activities including touching genitals, oral sex, intercourse, and genital stimulation (Santos-Inglesias et al., 2016). While researchers found that participants engaged in non-genital sexual behaviors significantly more frequently than genital sexual behaviors, participants still reported engaging in genital sexual behaviors once a week on average (Santos-Inglesias et al., 2016). Santos-Ingelsias et al. further solidified that older populations continue to engage in sexual behavior. They also highlighted that genital forms of sexual activity must still be an aspect of study in older adults, as they found that

this population continued to engage in this type of sexual expression with relative frequency and consistency (Santos-Inglesias et al., 2016). Unfortunately, genital forms of sexual expression in older adults and how they contribute to well-being is relatively ignored.

While it is evident that older adults continue to engage in sexual behavior and enjoy active sex lives, it is also clear that sexual activity may decrease and vary with age (Merghati-Khoei et al., 2016). These decreases may be due to attitudes toward sexuality in old age, physical decline, mental health, or other psychosocial challenges. However, maintaining a healthy sexual lifestyle in old age may positively impact other salient aspects of the aging process. Sexual behavior has been shown to improve mental states and well-being in individuals across the lifespan (Espinosa-Hernandez & Vasilenko, 2015), however limited information has been gathered assessing sexual behavior and well-being in older adults. The identification of additional information regarding older adults' sexual behavior and well-being may increase awareness of aspects influencing successful aging.

Sexual Behavior and Psychological Well-Being

There have been countless studies on human sexual activity across age ranges which promote a negativistic view of sexual behavior. These studies often examine sexual behavior in a pathologized manner, and connect sex behaviors and sexuality to sexual disease or causing harm (Vrangalova, 2015). However, other research has highlighted the positive impacts of healthy sexual activity on many different life domains. Although there is a general dearth of research regarding sexual behavior and well-being in older populations, several studies have addressed the positive effects of

sexual activity on overall well-being. Similarly, with other studies assessing well-being, these studies examining the positive effects of sexual activity have thus far been generally rooted in subjective well-being, rather than in psychological or eudaimonic well-being. Recent research, however, has shown promising relationships between sexual behavior in older adults and their improved well-being and health (Syme, 2014).

Interested in sexual behaviors in older populations, Chao et al., (2011) analyzed how sexual desire and satisfaction impacted older adults' quality of life with a sample of individuals aged 45 and older. The researchers analyzed sexual frequency, desire, and satisfaction in relation to overall quality of life, which was measured through a scale assessing physical, psychological, social-relational, and environmental aspects of quality of life (Chao et al., 2011). They found that over 60% of participants had been engaging in sexual intercourse. Moreover, they found that over 80% of all participants were capable of achieving sexual satisfaction (Chao et al., 2011). Interestingly, results showed that sexual desire did not directly influence quality of life, but it did have a direct influence on sexual satisfaction. This research provides further information on constructs within sexual behavior, and how these impact well-being. Not only was the act of sex important, but the satisfaction derived from the behavior was what impacted well-being. While their study included participants that were middle- and old-aged, their findings indicated that both the pleasure derived from sexual activity and its frequency are important components to understand. Although their study analyzed quality of life in relation to sexual behaviors, quality of life has been found to correlate with psychological well-being (Kafka, & Kozma, 2002). Given the relationship between life satisfaction and

psychological well-being, Chao et al. (2011) would suggest that sexual behaviors may contribute to improved psychological well-being in elderly adults.

Taking a more robust approach and including different measures of health and well-being, Bach et al. (2013) analyzed whether an association between sexual activity and health conditions exists in older adults. They were interested in whether physical conditions and mental health were related to sexual activity in elderly males and females over 80 (Bach et al., 2013). Of note, sexual activity was measured through one self-reported measure, and no further information was provided with respect to what being sexually active meant to the older participants, or how the participants themselves interpreted the question. The researchers found that health conditions including diabetes, high cholesterol, and hypertension, as well as cardiovascular risk factors, were associated with reported sexual inactivity (Bach et al., 2013). Unsurprisingly, conditions that led to pain, directly interfered with partnered sex, or compromised energy reserves or mobility were also associated with reduced sexual activity (Bach et al., 2013). Additionally, negative mental health symptoms and depression, as well as self-reported dementia, were significantly associated with sexual inactivity (Bach et al., 2013). Bach et al. (2013) also showed that regular exercise, effective social support, and psychological well-being were associated with increased sexual activity. However, researchers failed to operationalize their measure of psychological well-being. It seems that their conclusions were based upon measures of mental health, rather than upon psychological well-being as understood through a eudaimonic perspective. Regardless, Bach et al.'s (2013) research suggests a broader association between sexual behavior and the impacts on different life domains than previously found. Therefore, it underlies the importance of sexual behavior in older

adults, and suggests that limited sexual behavior negatively impacts overall well-being in older adults.

Interested in cognitive functioning and mental well-being, Wright and Jenks (2016) studied the association between sexual activity and cognitive functioning in older adults through a longitudinal approach. Researchers found that indeed, older adults who were engaging in sexual behaviors had increased levels of cognitive functioning, however gender differences existed (Wright & Jenks, 2016). While overall cognitive functioning was higher among sexually active men than their non-active peers, sexual activity was found to only improve memory function among women and was not significantly associated with other cognitive tasks (Wright & Jenks, 2016). With results indicating cognitive benefits related to sexual behavior, the influence of sexual behavior is further shown. However, researchers only analyzed whether individuals were engaged in these behaviors and did not account for the effects of frequency or satisfaction on cognitive well-being. Even though Wright and Jenks (2016) still provide additional information regarding the positive benefits of sexual behavior, greater understanding of the association between sexual behavior and overall well-being is needed.

While previous studies have suggested that there is a positive relationship between sexual behavior and psychological well-being in older adults, studies have yet to address well-being through a eudaimonic approach. The impact of sexual behaviors on older adults transitioning to old age is largely unaddressed. In order to gain a more comprehensive understanding of how the aging process affects psychological well-being, other constructs must also be analyzed. Understanding that psychological well-being focuses on the fulfillment of human potential in different life domains, it is important to

identify and explore factors that can facilitate or influence its development in old age. One such factor is personality. Personality has predictive value for aspects of aging well, as well as overall psychological well-being (Wright, & Brown, 2016).

Personality

Personality is a complex system, which has been studied across life domains and practices. Many scholars have attempted to define personality, and most generally focus on a pattern of characteristics and behaviors that help to explain and possibly predict an individual's behavior. One salient definition asserts that "personality refers to an individual's characteristic patterns of thought, emotion, and behavior, together with the psychological mechanisms – hidden or not – behind those patterns" (Funder, 2013, p. 5). Research on personality has led to a number of theories and models that help explain how and why certain individualized personality traits develop. These theories often focus on a variety of influences, including genetic explanations, environmental impacts, and developmental milestones. Differences in personality traits are associated with many important aspects of life, including romantic relationship behaviors (Kashdan, Blalock, Young, Machell, Monfort, McKnight, & Ferssizidis, 2017), employment outcomes (Fang, Landis, Zhang, Anderson, Shaw, & Kilduff, 2015), and health behaviors (Mõttus, McNeill, Jia, Craig, Starr, & Deary, 2013). Throughout the past several decades of research, a consensus has formed that individual differences in personality may be understood through a hierarchical system composed of major personality traits (Zillig, Hemenover, & Dienstbier, 2002). Among these approaches, five-factor model has gained distinct prominence.

Five-Factor Model

One of the most well-established personality frameworks is the five-factor model of personality, commonly referred to as the Big Five (McCrae & Costa, 1987). This model includes a valid and reliable assessment for measuring personality traits, and has been shown to be an effective framework across cultures (McCrae, Terracciano, & 78 Members of the Personality Profiles of Cultures Project, 2005). The five-factor theory of personality explains the function of personality as a universal personality system, with defined categories and dimensions of processes. It is a modern version of trait theory based on the assumptions that people are knowable, rational, variable, and proactive (McCrae & Costa, 2008). Five personality factors explain the core of the model: neuroticism, extraversion, openness, agreeableness, and conscientiousness.

McCrae and Costa (1992) believed that one could determine a comprehensive understanding an individual's behavior by evaluating him or her based upon the five factors that they defined. Openness, in its essence, is being willing to try new and different experiences (McCrae & Costa, 1987). One who is conscientiousness would tend to plan behavior rather than act spontaneously and would be a responsible individual, while someone with traits related to agreeableness would be caring and compassionate about other people, and would generally be helpful and friendly (McCrae & Costa, 1987). Someone espousing qualities of extraversion would have a desire to interact with other people, and be social and self-confident, while those with neurotic traits would have feelings of anxiety and insecurity, and possibly unstable emotions (McCrae & Costa, 1987). While personality is important to consider, one cannot discount the research of personality in older ages that examines the plastic nature of

personality. In order to include influences of personality in the current study, personality stability must first be established.

Personality and Aging

In assessing personality in older adults, there has been much debate as to whether traits are consistent and stable across time, or if different environmental and developmental factors cause changes in personality throughout a person's lifespan. McCrae and Costa asserted that personality traits develop through childhood, reach maturity in adulthood, and are subsequently stable in all individuals who are cognitively healthy (McCrae & Costa, 2008). Moreover, they contended that this pattern holds across cultures (McCrae & Costa, 1994; McCrae et al., 2000). From this perspective, a person's personality is predisposed as a result of his or her genetic influences only to grow and change in a predetermined manner throughout the course of his or her life. McCrae and Costa were so firm in their belief of the stability of personality that they asserted that traits are essentially "temperaments" and are impervious to influence from a person's environment (McCrae & Costa, 2008, p. 145).

Many other researchers, especially gerontologists, believe in the plasticity of personality. According to these theorists, environmental influences and developmental changes affect personality traits, which contributes to continued development in later life (Roberts, Wood, & Caspi, 2008). Recently, more nuanced developmental questions about personality traits have arisen due to a critical mass of longitudinal studies suggesting that personality traits change during the aging process. Such studies have shown that through the aging process, there is an increase in emotional stability (Bleidorn, Kandler, Riemann, Angleitner, & Spinath, 2009; Lucas & Donnellan, 2009;

Soto, John, Gosling, & Potter, 2011; Roberts & Takahashi, 2011), and an increase in conscientiousness (Lucas & Donnellan, 2009; Neyer & Lehnart, 2007; Roberts, Walton, & Viechtbauer, 2006; Soto et al., 2011). Some studies analyzing conscientiousness into advanced older age found that conscientiousness decreased (Terracciano, McCrae, Brant, & Costa., 2005; Roberts & Takahashi, 2011). Agreeableness has been shown to increase over time (Terracciano et al., 2005; Roberts et al., 2006; Neyer & Lehnart, 2007; Bleidorn et al., 2009; Lucas & Donnellan, 2009; Roberts & Takahashi, 2011; Soto et al., 2011), and results on the plasticity of extraversion have been mixed. In regards to openness, a curvilinear pattern has been found, showing increases in early adulthood and decreases in old age (Terracciano et al., 2005; Roberts et al., 2006; Roberts & Takahashi, 2011). Though many studies have shown that personality traits change through the aging process, changes often do not reach clinical or practical significance.

Although some studies have found results suggesting trait plasticity, trait stability is generally regarded as a defining aspect of personality. In a recent meta-analysis, Ferguson (2010) analyzed personality trait stability from studies of normal and pathological personality traits across the lifespan. Ferguson (2010) found that whether personality was normal or pathologized, it was stable across time. While inconsistent results have been produced, and a final consensus has not been reached with respect to whether personality changes or remains stable through the aging process, current data seems to point more toward stability of personality. Personality as a stable construct has been utilized in several studies to predict well-being outcomes. Though the influence of personality is undeniable, the extent to which personality correlates with psychological well-being remains unclear.

Personality and Psychological Well-Being

Personality has long been thought to have an influence on well-being. Two different types of models have been used to try to predict well-being: top-down models, which state that personality traits predict well-being, and bottom-up models, which emphasize environmental influences and assert that contextual factors predict well-being (Ryff, 2008). Regarding the top-down model, many researchers have studied personality as a predictive influence of well-being, however there are still differences in opinion as to what comprise the measurement components of well-being. Well-being is still most often associated with subjective well-being, which reflects what people think and feel about their life (Lucas & Diener 2008). Although these measures do not address the eudaimonic aspect of well-being, studies have nonetheless shown a relationship between personality and well-being.

Steel, Schmidt, and Shultz (2008) conducted a meta-analysis on the relationship between personality and subjective well-being. They were interested in investigating the strength of the connection between personality and subjective well-being and whether the impact of personality is generally underestimated (Steel et al., 2008). Results indicated that personality traits play a much greater role in determining an individual's general level of subjective well-being than previous research had shown, as all five of the Big Five personality traits were significantly correlated to measures of well-being. Specifically, the relationship between personality and subjective well-being showed the trait of neuroticism is most strongly associated with negative affect and is an indicator of poor well-being, while the trait of extraversion is associated with positive affect, indicating higher well-being (Steel et al., 2008). As for the other three traits from

the five-factor model, agreeableness and conscientiousness were positively associated with well-being – but less strongly so than were neuroticism and extraversion – while the effects for openness to experience were the smallest, although they were also found to be in the direction of positive association with well-being (Steel et al., 2008). These results not only further confirmed the relationship between personality and subjective well-being, but also demonstrated which traits seem to be most salient when assessing well-being. Although this study did not assess psychological well-being, nor was age was a consideration, future research on well-being cannot discount the influence of personality.

Gale, Booth, Mõttus, Kuh, and Deary (2013) also attempted to analyze well-being in older adults, and utilized an integrated approach to assessing well-being including life satisfaction and mental well-being scores. Though this approach continued to lack psychological well-being as a studied construct, researchers seemed to recognize the importance of including more than just subjective aspects of well-being. Life satisfaction has been shown to be a hedonic measure of well-being; however, with respect to mental well-being, they utilized a scale assessing positive affect, psychological functioning, and interpersonal relationships, which they believed incorporated aspects of both hedonic and eudaimonic well-being (Gale et al., 2013). Gale et al. (2013) were similarly interested as Steel et al. (2008) in assessing whether the Big Five personality traits would predict well-being. Gale et al. (2013) specifically highlighted extraversion and neuroticism in their study, and analyzed the relationship with personality and well-being longitudinally, providing assessments to participants at age 16 and later at age 26. Extraversion was found to have significant and direct effects on well-being in later years, as older participants tended to have greater well-being with higher levels of extraversion (Gale et

al., 2013). Neuroticism had a smaller direct effect on well-being, and was significantly associated with lower life satisfaction scores only, not their integrated mental well-being variables (Gale et al., 2013). This study further solidified the impact of extraversion and neuroticism within the five-factor model of personality, and also showed how well-being was associated with personality over time. However, Gale et al. (2013) analyzed participants in young adulthood, and did not examine this relationship in older adulthood. Additionally, the researcher's model did not fully assess the eudaimonic dimensions of psychological well-being. As stated previously, people experience compounded changes in their lifestyles in old age across different domains, and while personality has been shown to influence well-being in younger populations, identifying this relationship in the transition to old age would likely enhance our understanding of successful aging in elderly individuals.

Butkovic, Brkovic, and Bratko (2012) also analyzed well-being through an integrated assessment of well-being, which analyzed both subjective and eudaimonic aspects of well-being. They were interested in determining whether personality would predict well-being in adolescents and older adults. Butkovic et al. (2012) believed that both hedonic and eudaimonic measures of well-being were important aspects to analyze, however they did not use measures of the dimensions of psychological well-being. Instead, they used measures of subjective well-being, as well as measures of self-esteem and loneliness, which they believed addressed some aspects of eudaimonia. With these measures, Butkovic et al. (2012) thought that they were assessing a more a comprehensive picture of well-being in their participants. They found that personality traits explained large amounts of variance in well-being in both adolescents and older

adults, although personality was more significant in adolescents (Burkovic et al., 2012). Burkovic et al. found that their measures of self-esteem and loneliness, arguably their characteristics of eudaimonia, were explained more by personality. While the aforementioned studies by Steel et al. (2008) and Gale et al. (2013) indicate that personality traits have significant influence in the development of well-being, Burkovic et al. (2012) suggests that personality is less influential in older adults. Though personality was not as significant in older adults, it seemed to be more significant in aspects of eudaimonic well-being. To date, there seem to be no studies looking into eudaimonic aspects of well-being and personality in older adults explicitly. While personality remains an important and influential aspect to consider, this study prompts the question: what other factors predict well-being in older adults?

Kahlbaugh and Huffman (2017) attempted to bridge this gap, conducting a study which incorporated the pursuit of leisure activity with personality to assess well-being in older adults. They wanted to design a more comprehensive approach to studying contributory factors of successful aging, but did not discount the influence of personality (Kahlbaugh & Huffman, 2017). In studying successful aging, they analyzed subjective well-being, positive and negative affect, and functional ability. They found that not only are personality traits related to subjective well-being and successful aging, but such traits also predicted the pursuit of, and attitude toward, leisure activities, which further related to well-being (Kahlbaugh & Huffman, 2017). Researchers found that participants with higher levels of neuroticism were less likely to engage with leisure activities, and thus had lower scores of well-being. Though they did not assess psychological well-being, nor the aging process, the work by Kahlbaugh and Huffman (2017) underscore the need

to identify further constructs which impact well-being in older adults in order to better identify variables that strengthen the likelihood of increased well-being.

Although many studies have focused on measures of subjective well-being and hedonic variables when analyzing personality and well-being, the existence of a relationship between personality and well-being is evident. As Ryff (2008) pointed out, studies at the interface of personality and well-being are needed for older adults. It would seem essential to include personality in assessing psychological well-being in the transition to old age.

Research conducted on well-being thus far indicate that both top-down and bottom-up models are needed to explain the development of well-being, since personality traits as well as environmental and sociodemographic variables have been found to account for variance in well-being outcomes, albeit to different degrees. In the current study, both top-down and bottom-up understandings of well-being were studied to develop a more comprehensive picture of how the transition to old age impacts psychological well-being. A better understanding of how the transition to old age impacts psychological well-being has the potential to enhance successful aging on a macro level, and knowing how certain constructs support psychological well-being has the potential to influence future aging theory.

Inferences for Current Study

With their numbers surging and older adults representing an ever-growing proportion of our society's overall population (United Nations Development Division, 2015), the importance of studying the needs of individuals transitioning into old age has become much more pressing. Although improvements have been made, researchers

continue to conduct more research on younger populations. Erikson (1963) provides a theory of development which helps to formulate how older adults encounter the challenges of aging, and whether they are able to adapt and age successfully or fall into despair. The promotion of successful aging is rooted in Seligman's (2011) well-being theory, which asserts that the development of several constructs of well-being is necessary for positive functioning. Psychological well-being, a form of well-being proposed by Ryff (1989b), also espouses the same ideals as Seligman (2011). There are significant gaps in available research in regard to successful aging and psychological well-being, and as to whether specific constructs contribute to positive well-being in the transition to old age.

Given the dearth of research with respect to the transition to old age in general, and psychological well-being specifically, the current study sought to fill in some of the scholarship gaps concerning psychological well-being as individuals enter their later years. First, the current study identified how psychological well-being changes as individuals transition to old age. Although studies have supported that there is a decline in old age, there has also been studies that support the paradox of aging, in that older adults continue to have high levels of well-being despite significant challenges associated with aging (Jeste & Oswald, 2014). Given that this paradox of aging has been shown, psychological well-being was expected to increase. Next, the researcher analyzed specific constructs which are believed to contribute to successful aging and positive psychological well-being: sex behaviors and personality traits. Sexual behavior has received minimal attention in older populations, though sex has previously been found to have positive influences in different life domains, including physical, cognitive, and

mental health (Bach et al., 2013; Wright & Jenks, 2016). Additionally, although personality has been shown to have predictive value for aspects of aging and overall psychological well-being (Wright & Brown, 2016), the relationship between personality and psychological well-being in individuals transitioning to old age is minimal. As such, the current researcher assessed how sexual behaviors and personality traits predict the psychological well-being in those transitioning to old age, *i.e.*, over the age of 65. Given the influential nature of both physical health (Ryff, 2014; Friedman & Ryff, 2012; Homan, 2016) and gender (Khanbani et al., 2014; González-Carrasco et al., 2017; Li et al., 2015) on psychological well-being, the researcher additionally analyzed how physical health and gender may moderate the relationship between sexual behavior and personality with the change in psychological well-being over time.

Chapter III: Methodology

The purpose of the current study was to examine whether certain variables promote successful aging, defined as overall psychological well-being, and identify how overall psychological well-being changes as individuals transition from middle adulthood to old age. Additionally, the study attempted to identify how personality traits and sexual behaviors predict change in overall psychological well-being. Lastly, the potential moderating effects of physical health and gender on the strength of the relationships were also be tested.

The current study is a secondary analysis utilizing data collected from the Wisconsin Longitudinal Study (WLS) (Herd et al., 2014). The WLS began as a study of post-secondary educational aspirations and attainment of high school graduates in Wisconsin high schools in 1957, but it has become a prominent longitudinal study of the lifespan and aging (Sewell, Hauser, Springer, & Hauser, 2003). The organizations and universities responsible for the research determined much of the setting and design. The WLS began in 1957 with a survey administered to all graduates in Wisconsin high schools because state officials were interested in understanding the demand for secondary school education. Specifically, they were interested in seeing whether promising high school students were choosing to further their education post-high school and what circumstances contributed to their education plans (Herd et al., 2014). In the first follow-up study in 1964, William H. Sewell, a researcher and professor of sociology at the University of Wisconsin-Madison, randomly selected 1/3 of the original members of the study to examine how childhood experiences, aspirations, and family background impacted educational and occupational attainment (Herd et al., 2014). As participants

have aged, the survey has transformed to incorporate relevant aspects of the life course, from family formation and occupational experiences to retirement and health and well-being at older ages (Herd et al., 2014). The data collection is managed for WLS by the University of Wisconsin Survey Center.

This research examined data collected in a non-experimental longitudinal survey design. All variables were self-reported by the participants, and for the purposes of the current study, the data collection took place during two waves, the 1993 wave and 2011 wave, when participants were approximately 53 and 71 years old, respectively. The WLS is one of the first large longitudinal studies of adolescents, which provides the one of the first large-scale opportunities to study the life course from late adolescence through the early 70s (Herd et al., 2014). Since 1991, the WLS has been supported principally by the National Institutes for Health, National Institute on Aging, with additional support from the Vilas Estate Trust, the National Science Foundation, the Spencer Foundation, and the Graduate School of the University of Wisconsin-Madison (Herd et al., 2014). Beginning in 1993, researchers included comprehensive data on personality traits and psychological well-being, and in 2004 began to gather data about the sexual behaviors of older adults. This makes the WLS an ideal dataset for the current study.

Research Questions and Hypotheses

The following are the primary research questions and hypotheses for the current study:

1. How does psychological well-being change as individuals transition into older adulthood?

1a. As individuals transition from middle adulthood to older adulthood, psychological well-being will increase.

1b. As individuals transition from middle adulthood to older adulthood, psychological well-being will differ between males and females

2. How does sexual frequency and sexual satisfaction predict change in overall psychological well-being as individuals transition from middle adulthood to older adulthood?

   2a. Increased sexual frequency will be positively associated with positive change in overall psychological well-being in the transition from middle adulthood to older adulthood.

   2b. Increased sexual satisfaction will be positively associated with positive change in overall psychological well-being in the transition from middle adulthood to older adulthood.

3. How does personality predict change in psychological well-being as individuals transition from middle adulthood to older adulthood?

   3a. Extraversion, agreeableness, and openness will be positively associated with positive change in overall psychological well-being in the transition from middle adulthood to older adulthood.

   3b. Neuroticism and conscientiousness and will be negatively associated with positive change in overall psychological well-being in the transition from middle adulthood to older adulthood.

4. To what extent does gender and physical health moderate the relationship between sexual frequency and psychological well-being in the transition to older adulthood?

   4a. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and sexual frequency will be stronger in males than in females.

   4b. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and sexual frequency will be stronger in those who perceive themselves to have higher levels of physical health.

5. To what extent does gender and physical health moderate the relationship between sexual satisfaction and psychological well-being in the transition to older adulthood?

   5a. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and sexual satisfaction will be stronger in males than in females.

   5b. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and sexual satisfaction will be stronger in those who perceive themselves to have higher levels of physical health.

6. To what extent does gender and physical health moderate the relationship between personality and psychological well-being in the transition to older adulthood?

6a. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and extraversion, openness, and agreeableness will be stronger in males than in females.

6b. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and neuroticism and conscientiousness will be stronger in females than in males.

6c. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and extraversion, openness, and agreeableness will be stronger in those who perceive themselves to have higher levels of physical health.

6d. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and neuroticism and conscientiousness will be stronger in those who perceive themselves to have lower levels of physical health.

Participants

Population Sample

Nearly every student in Wisconsin in their final year of high school completed the original survey in 1957, and from that population study, one third of the original sample was drawn for the subsequent surveys (Herd et al., 2014). The initial recruited participants (N = 10,317) were born between 1938 and 1940 (Herd et al., 2014). The participants were in the last year of study in high school, nearing their graduation. The first follow-up study in 1964 comprised of a mail survey to parents of participants, and in 1975, a telephone survey was provided to graduates and one randomly-selected sibling.

Between 1992 and 1994, data on graduates and their sibling were collected via mail and telephone surveys. In 2003, researchers included the spouses of graduates in their data collection, and data were obtained from the graduates, their spouses, and their sibling through telephone or mail surveys. In the most recent wave of data collection in 2011, data from graduates and siblings were collected either in-person or via mail. For the purposes of the current study, data was only utilized from the 1993 and 2011 waves of data collection, and only focusing on the responses from the original graduates.

In the 1993 and 2011 waves, survey instruments contained key inventories of personality and psychological well-being, and in 2011 information on sexual behaviors were assessed. The current study drew from a subsample of graduate participants who completed the psychological well-being assessment during the 1993 and 2011 waves of the study. Descriptive statistics of the sample were analyzed and presented in Table 1. In the 1993 and 2011 waves, 80% of the total participants completed the psychological well-being assessment. In the 1993 sample, 6,846 participants completed the psychological well-being assessment, and in 2011, due to death and attrition, 5,285 participants completed the psychological well-being assessment. When assessing the change in psychological well-being, a total of 4,601 participants completed the psychological well-being assessment at both time points.

Demographics

At both time points, there were an approximately equal number of males and females. Demographic information of participants included in the analysis is presented in Table 1. The WLS sample is broadly representative of White, non-Hispanic American men and women who have completed at least a high school education in 1957. All

graduates in the WLS completed high school in Wisconsin, and identified their ancestry from mainly of German, English, Irish, Scandinavian, Polish, or Czech descent (Herd et al., 2014). As such, minorities are not well-represented, as there is only a handful of African American, Hispanic, or Asian persons in the sample (Herd et al., 2014). This lack of minority representation reflects the general population of Wisconsin in 1957, and certainly limits the generalizability of the findings from the study. Approximately 19 percent of the WLS sample is of farm origin, which is also consistent with national estimates of persons of farm origin in cohorts born in the late 1930s (Herd et al., 2014).

Table 1: Demographic Frequencies of Participants who responded to the 1993 and 2011 Psychological Well-Being Survey

Variables	1993		2011	
	n	%	*n*	%
GENDER				
Male	3149	46	2695	51
Female	3697	54	2590	49
AGE				
51	2	0		
52	533	7.8		
53	4288	62.6		
54	1810	26.4		
55	191	2.8		
56	22	.3		
70			1082	20.5
71			2385	45.1
72			1198	22.7
73			544	10.3
74			76	1.4
MARITAL STATUS				
Cohabitating	2	0	106	2
Never Married	273	4	158	3
Widowed	205	3	687	13
Separated/Divorced	753	11	529	10
Married	5613	81.9	3805	72
EMPLOYMENT				
Employed	5799	84.8	1639	31
Not Employed	1047	15.3	3646	69
PHYSICAL HEALTH				
Very Poor	27	.4	42	.8
Poor	89	1.3	111	2.1
Fair	678	9.9	787	14.9
Good	4080	59.6	3393	64.2
Excellent	1972	28.8	952	18.0
EDU ATTAINMENT				
High School Only	3991	58.3	3082	58.3
Some College	1082	15.8	835	15.8
Bachelor's	890	13.0	687	13.0
Master's	637	9.3	491	9.3
Professional Degree	123	1.8	95	1.8
PhD/MD	123	1.8	95	1.8

1993 N = 6846
2011 N = 5285

Power Analysis

The power of a statistical test is the probability that the null hypothesis will be rejected when it is false (Type I error), or more specifically, the probability of obtaining a statistically significant result (Cohen, 1992). The current study had a sample size of 5,285 participants. Based on Cohen's (1988) table of statistical power, the sample size will have sufficient power to detect small effect sizes.

Human Participants and Ethical Precautions

The current study utilized secondary data, which eradicates many of the possible ethical concerns associated with research conducted with data collection involving directly working with human participants. Within the data provided, there is no information or markers that provide identifiable information of any participants. Protected measures, which are those measures that increase a subject's risk of identifiability, are available to qualified researchers by request from the principal investigators (Herd et al., 2014). In order to gain access to protected measures, proposals must be submitted and reviewed by an independent board for approval. The current study, however, did not necessitate the use of data including identifiable information. The organizational research team within the University of Wisconsin Survey center retains the key to all WLS data. Based upon the requirements defined by the Department of Health and Human Services (DHHS), the current study does not require submission to the George Washington University's Institutional Review Board (IRB).

Missing Data

Missing data for the current study is primarily comprised of participants not included in the assessment, participants whose data appears to be incomplete, or

participants who were not able to be contacted due to various reasons based on the review of the dataset (Herd et al., 2014). Missing data is a common problem in survey design, as it can reduce statistical power, lead to bias in inference, and increase the chance of committing a Type II error (Schafer, 1997). Listwise deletion is a method to address missing data which removes all data for a case that has one or more missing values (Peugh & Enders, 2004). Listwise deletion is an acceptable method to address missing data when data are missing completely at random, or if there is sufficient power with the remaining data (Roth, 1994). In the current study, a large majority of missing data was due to only a subset of participants being randomly selected to partake in segments of the specified survey. Due to the randomness of the missing data, listwise deletion was believed to be an appropriate means of addressing missing data. Additionally, the overly large sample that was provided by dataset to begin with, even accounting for missing data there was adequate power to detect meaningful effects. Thus, listwise deletion was utilized to account for missing data.

Attrition Rate

The WLS has studied their sample of participants across the lifespan, and thus attrition is a cause for concern. However, sample retention has remained high throughout the study and data collection process. Of the total sample starting from the 1957 who were still living, 87.31% were successfully interviewed in 1993, and 72.16% were successfully interviewed in 2011 (Herd et al., 2014).

Measures

Age

At the time of the 1993 data collection, participants were between the ages of 51 to 56, with a mean age of 53 years old. During the 2011 data collection, the age range of participants was 70 to 74, with a mean age of 71 years old.

Dependent Variable

Psychological well-being. In the 1993 and 2011 waves of the WLS, participants completed an abbreviated version of Ryff's Psychological Well-Being Scales (1989b), a self-report inventory which measures six dimensions of psychological well-being: autonomy, self-acceptance, environmental mastery, personal growth, positive relations with others, and purpose in life. As stated previously, these dimensions were based on previous theoretical assertions of positive functioning, typical lifespan development, and successful aging (Ryff, 1989b). The Psychological Well-Being Scales (Ryff, 1989b) were provided to participants via mail. The 2011 version provided scales measuring the same dimensions in the 1993 version, however in the 2011 version some items from each scale had been dropped, and the questions were not completely the same, making the individual dimensions briefer in the later wave (Herd et al., 2014). The order of the items in the surveys generally followed the pattern of asking one item from each of the constructs in the following order: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance (Herd et al., 2014). Sample items for each subscale were as follows: autonomy (e.g., ‘‘To what extent do you agree that you have confidence in your opinions even if they are contrary to the general consensus?’’), environmental mastery (e.g., ‘‘To what extent do you agree that you are

quite good at managing the many responsibilities of your daily life?''), personal growth (e.g., ''To what extent do you agree that you have the sense that you have developed a lot as a person over time?"), positive relationships with others (e.g., ''To what extent do you agree that you enjoy personal and mutual conversations with family members and friends?''), purpose in life (e.g., ''To what extent do you agree that you are an active person carrying out the plans you set for yourself?'') and self-acceptance (e.g., ''To what extent do you agree that in general, you feel confident and positive about yourself?'') (Herd et al., 2014). The response format included 6 choices ranging from 1 (strongly disagree) to 6 (strongly agree). The full version includes 14 items for each scale, however the WLS survey did not include all 14 items for each scale. In the survey administered in 1993, the scale contained 7 items for all scales (Herd et al., 2014). In the survey administered in 2011, the scale contained 5 items for the scales of autonomy, environmental mastery, personal growth, and self- acceptance; and 6 items for the scales of positive relations with others and purpose in life (Herd et al., 2014). The data in its raw form included summary scores for all items in 1993 and 2011 waves. In 1993, the summary scores ranged from 2-42, and in 2011 the summary scores ranged from either 2-30 or 2-36 depending on the number of items in the scales (Herd et al., 2014). Prior to the analysis, scales that were initially reverse coded were recoded so that all scales were measuring the same trajectory of well-being. Then, because there were more items in the 1993 wave than in the 2011 wave, only the corresponding items from each wave were used to create consistency between the waves. The extra scale items from 1993 were dropped. Lastly, the dimensions for psychological well-being were converted from sum scores to mean scores for each dimension with possible scores ranging from 1-6.

Bivariate correlations of the scales from 1993 and 2011 used in the current study are found in Tables 2 and 3. Additionally, correlations between the overall averaged psychological well-being variables used in the study are found in Table 4. All psychological well-being variables are continuous. Based upon previous studies, the internal consistency coefficients for the scales are as follows: autonomy, .86; environmental mastery, .90; personal growth, .87; positive relations with others, .91; purpose in life, .90; and self-acceptance, .93 (Ryff, 1989b). Correlations with the original scales ranged from 0.97 to 0.98 (Ryff & Keyes 1995). The test-retest reliability coefficients for the scales are as follows: autonomy, .88; environmental mastery, .81; personal growth, .81; positive relations with others, .83; purpose in life, .82; and self-acceptance, .85 (Ryff, 1989b). Exploratory factor analyses have found the structural validity of Ryff's Scales of Psychological Well-Being to be consistent across several studies (Burns & Machin, 2009). Additionally, total psychological well-being based upon Ryff's scales have been found to correlate positively with prior measures of well-being (i.e. the Life Satisfaction Index (Neugarten, Havighurst, & Tobin, 1961) and the Affect Balance Scale (Bradbrun, 1969)), and negatively correlate with measure of depression (i.e. Zung's (1965) Depression Scale) (Kafka, & Kozma, 2002). Given that the total score has been found to be a valid measurement of psychological well-being in previous research, the total psychological well-being was used to assess psychological well-being in the current study, rather than each individual dimension.

With the current dimensions and scales used in the study, the correlations between dimensions in 1993 ranged from .30 to .69 (see Table 2), and the correlations between the 2011 dimensions ranged from .30 to .68 (see Table 3). Reliability of both scales was

high (α = .86). The overall psychological well-being variables constructed for the study, which used only corresponding items and scales from both time points, had a correlation of .63 (see Table 4) and had a high reliability (α = .78).

Table 2. Bivariate Correlations 1993 Psychological Well-Being Dimensions

	Autonomy	Mastery	Growth	Purpose	Pos. Rel.	Self-Accept.
Autonomy	--					
Mastery	.43**	--				
Growth	.43**	.44**	--			
Purpose	.44**	.61**	.62**	--		
Pos. Rel.	.30**	.49**	.49**	.54**	--	
Self-Accept.	.46**	.68**	.55**	.69**	.57**	--
M	3.10	3.73	3.76	3.90	3.96	3.91
SD	.88	.80	.80	.81	.77	.84

** Correlation is significant at the 0.01 level (2-tailed).
Note: Autonomy = Autonomy subscale; Mastery = Environmental mastery subscale; Growth = Personal growth subscale; Purpose = Purpose in life subscale; Pos. Rel. = Positive relations with others subscale; Self-Accept = Self-acceptance subscale.

Table 3. Bivariate Correlations 2011 Psychological Well-Being Dimensions

	Autonomy	Mastery	Growth	Purpose	Pos. Rel.	Self-Accept.
Autonomy	--					
Mastery	.42**	--				
Growth	.41**	.58**	--			
Purpose	.38**	.59**	.64**	--		
Pos. Rel.	.30**	.53**	.55**	.54**	--	
Self-Accept.	.41**	.68**	.57**	.56**	.52**	--
M	3.55	3.93	3.90	3.63	3.84	3.90
SD	.75	.76	.76	.80	.88	.76

** Correlation is significant at the 0.01 level (2-tailed).
Note: Autonomy = Autonomy subscale; Mastery = Environmental mastery subscale; Growth = Personal growth subscale; Purpose = Purpose in life subscale; Pos. Rel. = Positive relations with others subscale; Self-Accept = Self-acceptance subscale.

Table 4. Correlation of Overall Psychological Well-Being between 1993 and 2011

	Well-Being 1993	Well-Being 2011
Well-Being 1993	--	
Well-Being 2011	.63**	--
M	3.79	3.79
SD	.63	.61

** Correlation is significant at the 0.01 level (2-tailed).
Note: Well-being = Overall psychological well-being (measured by Ryff's Psychological Well-being Scales)

Predictor Variables

Personality. In the 1993 and 2011 waves of the WLS, surveys of graduates measured the basic dimensions of personality derived from the five-factor model. The surveys measured personality through self-reported data from a subset of items in the Big Five Inventory, version 54 (BFI-54) (John, 1990; John et al., 1991). In the current study, the 2011 wave of data was the only wave utilized to determine the impact of personality on change in psychological well-being. The BFI-54 was developed to represent the five personality traits: extraversion, neuroticism, agreeableness, conscientiousness, and openness. It uses phrases based upon the trait adjectives known to be prototypical markers of the Big Five (John, 1990). Sample items for each personality trait were as follows: extraversion (e.g. "To what extent do you agree that you see yourself as someone who is talkative?"), agreeableness (e.g. "To what extent do you agree that you see yourself as someone who tends to find fault with others?"), conscientiousness (e.g. "To what extent do you agree that you see yourself as someone who does a thorough job?"), neuroticism (e.g. "To what extent do you agree that you see yourself as someone who can be tense?"), and openness (e.g. "To what extent do you agree that you see yourself as someone who prefers the conventional and traditional?") (Herd et al., 2014).

As with the psychological well-being scales, the response format within each trait included 6 choices ranging from 1 (strongly disagree) to 6 (strongly agree). The data in its raw form was coded via sum scores ranging from 2-36. Prior to the analysis, scales that were initially reverse coded were recoded so that all scales were measuring the same trajectory of the personality dimensions. Then, dimensions for each personality trait were converted from sum scores to mean scores. Bivariate correlations of the personality dimensions used can be found in Table 5. Each personality variable was continuous.

In previous studies utilizing the BFI-54, it has been shown to be a reliable and valid assessment. In adult nonclinical individuals, the BFI-54 has yielded sound validity evidence on the basis of substantial convergent and divergent relations with other, longer Big Five instruments and with peer ratings (John, Naumann, & Soto, 2008). The internal consistency coefficients for the scales of each trait measured are as follows: extraversion, .86; agreeableness, .79; conscientiousness, .82; neuroticism, .87; and openness, .83 (John et al., 2008). Additionally, the BFI-54 has been found to have reliable and valid scores across gender, age, and culture (Gurven, Von Rueden, Massenkoff, Kaplan, & Lero Vie, 2013; Soto & John, 2009). In the current study, items ranged from 1-6, and correlations between dimensions ranged from .31 to .76. The overall scale had a high reliability (α = .87).

Table 5. Bivariate Correlations of Personality Dimensions

	Openness	Conscientious.	Extraversion	Agreeableness	Neuroticism
Openness	--				
Conscientious.	.75**	--			
Extraversion	.73**	.68**	--		
Agreeableness	.75**	.76**	.68**	--	
Neuroticism	.41**	.32**	.31**	.31**	--
M	3.95	5.13	4.17	5.20	3.26
SD	2.02	1.62	1.74	1.62	1.46

** Correlation is significant at the 0.01 level (2-tailed).
Note: Openness = Openness subscale; Conscientious. = Conscientiousness subscale; Extraversion = Extraversion subscale; Agreeableness = Agreeableness subscale; Neuroticism = Neuroticism subscale.

Sexual behavior. A strong precedent for utilizing self-report measures of sexual behaviors and sexuality has been made in studies of health and social sciences. Self-reports of sexual behaviors have been used as outcome measures in countless studies investigating a multitude of clinical and non-clinical populations (Mustanski, Birkett, Greene, Rosario, Bostwick, & Everett, 2014; Houck, Barker, Rizzo, Hancock, Norton, & Brown, 2014; Levenson, Willis, & Prescott, 2016). Due to previous studies utilizing self-report measures successfully in their studies, the current study also utilized self-report measures of sex behaviors. Data collection of sexual behaviors was conducted in the 2011 wave of data collection only. The two variables used in the current study queried about sexual frequency and the satisfaction derived from sexual experiences. Bivariate correlations of the sexual behavior variables are found in Table 6.

Sexual frequency. Sexual frequency was constructed based upon two questions provided. The first question utilized skip logic, and asked a "yes" or "no" rated question of, "Do you have a sexual partner?" Participants who answered "yes" were then directed to the question, "During the past 12 months, about how often did you have sex with your spouse or partner?" Response categories for the second questions were via Likert scale,

and were as follows: 1 (once a day or more), 2 (3 to 6 times per week), 3 (once or twice a week), 4 (2 to 3 times a month), 5 (once a month or less), and 6 (not at all). Sexual frequency was constructed by including the "no" responses from "Do you have a sexual partner" as well as the variables from the subsequent question. Participants who answered "no" to the "do you have a sexual partner" question were counted as not having any partnered sex in the new sexual frequency variable. Those who answered "yes" were not counted because they were then provided the question regarding the amount of sex they had. Thus, the sexual frequency measures defines sexual frequency as the amount of sexual activity with a sexual partner. Once the sexual frequency variables were included, the scores were then reversed and re-ordered, 0 indicating "not at all," and 5 indicating "once a day or more."

Sexual satisfaction. Sexual satisfaction was measured by the question, "In the past 12 months, how physically pleasurable did you find your sexual relationship with your spouse or partner to be?" Response categories were provided in a Likert-scale from 1 to 5, with 1 indicating not at all, and 5 indicating extremely, making the variable continuous. Responses for sexual satisfaction did not include the same skip-logic questions that the sexual frequency variable required, and as such there is a higher participant response rate for sexual satisfaction than sexual frequency.

Table 6. Bivariate Correlation of Sexual Frequency and Sexual Satisfaction

	Sexual Frequency	Sexual Satisfaction
Sexual Frequency	--	
Sexual Satisfaction	.11**	--
M	1.02	2.25
SD	1.20	1.27

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

Moderators

A moderator is a variable that alters the direction or strength of the relation between a predictor and an outcome (Holmbeck, 1997). Therefore, a moderator effect is an interaction where the effect of one variable depends on the level of another (Frazier, Tix, & Barron, 2004). In the current study, gender and physical health were believed to moderate the relationship between the independent and predictor variables. Descriptive information on the moderator variables are found in Table 1.

Gender. All participants' self-reported gender was gathered during a demographic segment of the administered surveys. The participants were asked to identify their gender based upon a single measure, "Graduate's sex." The responses provided were categorical, including "male" or "female" only. Females were coded as 1, and males were coded as 0.

Physical health. As with sexual behaviors, a strong precedent has also been made in research in psychological and social sciences literature utilizing self-report data regarding health and perceived health status (Jokela, Batty, Hintsa, Elovainio, Hakulinen, & Kivimäki, 2014; Bookwala, Marshall, & Manning, 2014; Fiori & Jager, 2012). During the 1993 and 2011 waves, participants were asked to rate their health using a standard single item measure, "How would you rate your health at the present time?" Response

categories were provided in a Likert-scale from 1 to 5, with 1 indicating very poor health, and 5 indicating excellent health, making physical health a continuous variable.

Control Variables

The use of control variables in nonexperimental research is routine and widespread, and has become standard practice to include control variables as the first entered model in hierarchical multiple regressions (Spector & Brannick, 2011). The purpose of including control variables in statistical analyses is so that researchers can obtain more accurate estimates of relationships among variables of interest (Spector & Brannick, 2011). Control variables are often considered to be extraneous, and are not linked to the hypotheses being studied. For the current study, several variables were controlled in the hopes that the researcher would be able to delineate the studied relationships without identified constructs confounding the results. Education attainment, net worth, and employment status were included as control variables. Demographic information on the control variables are also found in Table 1 with the exception of net worth due to being a range of monetary amounts.

Educational attainment. All participants' level of education was self-reported and gathered during an education subset of the administered surveys. The participants were asked to identify their level of education based upon the following prompt: "Summary of equivalent years of regular education based on highest degree" (Herd et al., 2014). For the current study, educational attainment was dummy coded from a continuous to a categorical variable, which ranged from 1 to 2. In the study, 1 indicated a high school degree, and 2 indicated some college or greater. Given that all of the participants graduated high school, lower educational levels were not needed.

Net worth. Information was gathered from all participants about their net worth in the 1993 and 2011waves of the WLS (Herd et al., 2014). Net worth was comprised of a substantial auditing of all participants' assets. It was calculated based upon their responses regarding their assets, which include the following information: the value and debt on real estate and vehicles, credit card and other debt, financial assets (bank accounts, investments, etc.), life insurance, and income from owned assets (Herd et al., 2014). Based upon the collected data, researchers coded participant wealth based a continuous variable that ranged from $0 - $766,500,001.

Employment status. Data regarding employment was collected from participants in the 1993 and 2011 waves of data in the WLS (Herd et al., 2014). Employment status was collected via a dichotomous variable, as participants were asked to identify whether they were "currently employed," or "not currently employed" (Herd et al., 2014).

Data Analysis

The research questions for this study were quantitative and intended to explain possible relationships among variables. Thus, data was coded and analyzed from the scientific method of quantitative analyses, through a positivistic perspective (Crotty, 1998). All data was analyzed using SPSS version 24 (IBM Corp., 2016). Prior to completing statistical analyses, the available data was managed and cleaned.

Preliminary Data Management

The data provided by the WLS consists of a large range of information in its raw form as well as many transformed and constructed variables. Edits and transformations for the current study were necessary in order to allow for appropriate analysis of the data.

These edits were previously discussed in the individual measure that the data management took place

Centering data. Prior to conducting analyses, independent (sexual frequency, sexual satisfaction, openness, conscientiousness, extraversion, agreeableness, and neuroticism) and the moderator variable of health were centered (Aiken & West, 1991). The moderator variable of gender was not centered due to being a categorical variable. Mean-centering was accomplished by subtracting the mean from each group of scores prior to conducting the analyses. The purpose of centering these variables was to primarily increase interpretability and reduce issues of multicollinearity. (Aiken & West, 1991; Cohen, West, & Aiken, 2003). To test for moderation, multiplicative interaction terms were created with the moderator predictors. Each interaction was generated by multiplying the centered values for the independent with moderator variables (Aiken & West, 1991; Cohen et al., 2003). These product terms were: *sexual frequency x health, sexual frequency x gender, sexual satisfaction x health, sexual satisfaction x gender, openness x health, openness x gender, conscientiousness x health, conscientiousness x gender, extraversion x health, extraversion x gender, agreeableness x health, agreeableness x gender, and neuroticism x health, and neuroticism x gender.*

Preliminary Tests

Once the data was managed and ready for use, descriptive statistics were computed, internal consistency was measured using Cronbach's alpha, and correlations between constructs were computed. Once this was completed, assumption testing took place. Assumption testing helped to ensure that correct conclusions are being drawn

from the analyses, while ignoring these assumptions may have contributed to incorrect validity estimates (Antonakis & Deitz, 2011).

Statistical Analyses

Once the data was prepared and assumption testing was completed, the statistical analyses were conducted. Question one was analyzed using a two-way mixed effects ANOVA, which determined whether overall psychological well-being was affected between 1993 and 2011, and whether gender impacted overall psychological well-being when accounting for time and when ignoring time. All remaining hypotheses were completed using hierarchical regression analyses. Given that the current study assessed participants over time, the model in all hierarchical regressions was always psychological well-being at 1993, while the dependent variable was the psychological well-being at 2011. In controlling for 1993 psychological well-being in the 2011 psychological well-being, the variance was removed in the 2011 psychological well-being that was accountable by the variance in the 1993 psychological well-being. This was how the change between time points was identified. The remaining models determined the extent to which sexual frequency and satisfaction (question two) and personality traits (question three) predict change in overall psychological well-being after controlling for covariates, and also to see how gender and physical health moderate these relationships (questions four through six).

A series of hierarchical regressions were completed separately for each predictor set for sexual behaviors and personality traits. In the hierarchical regressions a series of models were built, always with overall psychological well-being in 1993 in the first model. In the second model, the covariates (educational attainment, net worth, and

employment status) were added. In models just assessing the predictors, the primary predictors of interest were added last (sexual frequency, sexual satisfaction, or personality traits). In models which assessed whether gender or health acted as moderators to the relationships, the first two models continued to be psychological well-being at 1993 and the covariates. In the third model, the main effects of the moderator variables were included (physical health and gender), and in the fourth model, the primary predictors were added (sexual frequency, sexual satisfaction, or personality traits). In the last model, the interaction effects of the moderates and primary predictor of interest were included. As the variables were added to the hierarchical linear model framework, the change in R^2 and F were evaluated to determine whether the model improved as a function of increased complexity. R^2 is the explained variation in the analysis, as the change indicated how much more or less the model explained the variability in the data, while the F statistic compared the fits of different models (Kashy, Donnellan, Ackerman, & Russell, 2009).

Summary

Chapter Three described the participants, instrumentation, procedures for data collection, and the data analyzed in the current study. In summary, the current study investigated the aging process, and particularly the transition into old age and what variables would promote successful aging. Successful aging is identified in the current study as overall psychological well-being. Sexual behaviors and personality traits were hypothesized to predict the overall psychological well-being of those transitioning into old age, and gender and health were expected to moderate the relationships analyzed. The WLS, a secondary dataset, was used as the source of data due to the longitudinal

nature of the dataset as well as the variables included. The data was derived from the 1993 and 2011 waves specifically. Following preliminary data management and testing for assumptions, two-way mixed effects ANOVA was conducted to determine whether overall psychological well-being was affected between 1993 and 2011, and whether gender impacted overall psychological well-being when accounting for time and when ignoring time. Next, hierarchical regressions were conducted to further asses how the predictor and moderator variables are associated with the change in overall psychological well-being. Results and data analyses are presented in Chapter Four.

Chapter IV: Results

The purpose of the current study was to examine the extent to which sexual behaviors and personality predict the change in overall psychological well-being, and to investigate any moderating effects that gender and overall health have on the relationship between overall psychological well-being and the predictive variables. Two-way mixed effects ANOVA and hierarchical regressions with moderated effects were utilized to analyze the study variables. This chapter will discuss the results of the study, which are organized based upon the research questions and their corresponding hypotheses, and overall findings are summarized.

Two-Way Mixed Effects ANOVA

Assumptions

Prior to analyses, assumption testing was conducted for the two-way mixed ANOVA. The two-way mixed ANOVA had eight assumptions to test. The first three related to the design of the study itself, requiring that there was a continuous dependent variable, a between-subjects independent variable and a within subjects independent variable (Wilcox, 2012). The remaining five assumptions address how the data fit with the model and are as follows: there should be no significant outliers; the dependent variable should be approximately normally distributed; homogeneity of variance is present; homogeneity of covariances is met; and the assumption of sphericity is met (Wilcox, 2012).

Outliers are cases where the observed value of the dependent variable is very different to its predicted value (Weinfurt, 2000), and were detected using the studentized residuals. Observations are considered when the studentized residual is greater than 3

(Weinfurt, 2000). There were no outliers, as assessed by examination of studentized residuals for values greater than 3. Normality indicates that the distributions of the residuals are normal, and was assessed though a Normal Q-Q Plot (Wilcox, 2012). Through the assessment of the Normal Q-Q Plot, psychological well-being was normally distributed. Homogeneity of variance indicates that there are equal variances between the categories of the between-subjects variable at each category of the within-subjects variable for the dependent variable (Wilcox, 2012). If variances are unequal, the Type I error rate could be affected. This was determined by using Levene's test for equality of variances, which indicated that there was homogeneity of variances ($p > .05$). Similarly to the homogeneity of variance, the homogeneity of covariances assumes that the within-group covariances matrices are equal, and was tested using Box's test of equality of covariance matrices (Wilcox, 2012). Through this analysis, homogeneity of covariances was met ($p = .034$). Sphericity is the condition where the variances of the differences between all combinations of groups are equal, and a violation of sphericity could cause an increase in the Type I error (Wilcox, 2012). Sphericity only needs to be tested if the within-subject factor has three or more categories, and given that the current study only had 2, the assumption of sphericity did not need to be tested.

Once assumption testing was completed, a two-way mixed ANOVA was conducted to analyze psychological well-being across time points (1993 and 2011), as well as identify how gender impacts overall psychological well-being.

Research Question One

How does psychological well-being change as individuals transition into older adulthood?

1a. As individuals transition from middle adulthood to older adulthood, psychological well-being will increase.

1b. As individuals transition from middle adulthood to older adulthood, psychological well-being will differ between males and females

A two-way mixed effects ANOVA was conducted in order address question one. The main effect of time showed there was not a statistically significant difference in overall psychological well-being between 1993 and 2011, $F(1, 4599) = 1.19$, $p = .28$, partial $\eta^2 < .001$. As shown in Table 4, psychological well-being in 1993 and 2011 were highly correlated at .63. This correlation also helps to support that overall psychological well-being remained consistent between 1993 and 2011. Additionally, there was no statistically significant interaction between the change in overall psychological well-being between 1993 and 2011 with gender, $F(1, 4599) = .024$, $p = .88$, partial $\eta^2 < .001$. However, the main effect of gender showed that there was a statistically significant difference in the overall psychological well-being between males and females $F(1, 4599) = 19.82$, $p < .001$. The partial eta-squared ($\eta^2 = .004$) was of small effect size. Females ($M = 3.832$, $SD = .614$), specifically, reported higher levels of overall psychological well-being across both time points than men ($M = 3.758$, $SD = .605$). The effect of females and males was small, however (*Cohen's d* = .121). A scatterplot was formulated post-analysis which indicated a positive linear relationship between overall psychological well-being at 1993 and 2011.

Hierarchical Regression Analyses

Hierarchical regression analyses were utilized to test the research questions of the predictive influences of sexual frequency, sexual satisfaction, and personality, and more

specifically whether gender or health had any moderating effects. Independent and moderator variables (apart from gender) were centered prior to analysis, per recommendation by Aiken and West (1991) to reduce multicollinearity, which was expected between interaction and first-order terms. Hierarchical multiple regressions were conducted for each potential independent variable (sexual frequency, sexual satisfaction, and personality), moderator variables (gender and health), and the interaction terms between the independent and moderator variables. The hierarchical regressions with moderated effects were examined to address research questions two through six and their corresponding hypotheses. Statistical significance was determined at the .05 levels.

The hierarchical regressions allowed for the prediction of overall psychological well-being based upon the multiple predictor variables while controlling for the specified covariates (employment, net worth, and educational attainment) while considering the possible causal effects of the predictor variables. They are able to show the extra variation in the overall psychological well-being by the addition of the predictor variables. Additionally, evidence of moderation (research questions 4-6) was explored by examining the full models initially, and including the interaction terms in subsequent steps. Moderation was shown when an interaction term was statistically significant in the final regression equation (Baron & Kenny, 1986). The individual variables were also examined for statistically significant contributions in the prediction of the dependent variable.

Assumptions

The researcher tested the following assumptions necessary for regression analysis: normal distribution of the independent and dependent variables, linear relationships

between independent and dependent variables, reliability, homoscedasticity, independence of errors, and collinearity (Cohen et al., 2003). Linearity defines the dependent variable as a linear function of the predictor variables (Osborne & Waters, 2002). Being that the chance of non-linear relationships is high in the social sciences (Osborne & Waters, 2002), linearity was identified prior to conducting the analysis. Linearity was assessed through partial regression scatter plots, which showed that sexual frequency, sexual satisfaction, and personality were all linearly related to psychological well-being.

Independence of errors refers to the assumption that errors are independent of one another, suggesting that the participants are responding independently from others. Meeting this assumption reflects that the relationships in the populations are being met accurately (Osborne & Waters, 2002). The independence of errors was tested using the Durbin-Watson statistic. The Durbin Watson statistic is a number that tests for autocorrelation in the residuals from a statistical regression analysis, and is always between 0 and 4 (McAuliffe, 2005). To have no autocorrelation, the Durbin-Watson statistic should be between 1.5 and 2.5 (McAuliffe, 2005). All regression models ranged between 1.97 and 2.09, which satisfied this assumption.

Homoscedasticity refers to equal variance of errors across all levels of the predictor variables (Osborne & Waters, 2002). This would show that errors are spread consistently between the variables of the data, and can be checked by a visual examination of a plot of the standardized residuals (Osborne & Waters, 2002). Homoscedasticity was satisfied based upon the fact that the variance of residuals around the regression line was the same across levels of predictor variables.

The assumption of collinearity (or multicollinearity) refers to the assumption that the independent variables are uncorrelated (Keith, 2006). When collinearity is low, the effects of the independent variables on the dependent variables can be interpreted. Multicollinearity occurs when several independent variables correlate at high levels with one another, or when one independent variable is a near linear combination of the other independent variables (Keith, 2006). This was examined using a variance inflation factor (VIF), which estimates how much the variance of a regression coefficient is inflated due to multicollinearity in the model (García, García, López Martín, & Salmerón, 2015). In general, levels of VIF above 10.0 are considered to reflect significant multicollinearity (Cohen et al., 2003). The VIF across all regression models ranged between 1.0 and 4.09, which is less than the critical value of 10 (Cohen et al., 2003), suggesting that multicollinearity was not an issue.

The assumption of normality assumes that variables are normally distributed (Osborne & Waters, 2002). When normality is met, the errors are normally distributed and a plot of the values of the residuals will approximate to a normal curve (Keith, 2006). Normality was assessed by visual inspection of a histogram and P-Plot, which provided evidence of normal distribution in the data and the residuals. Shapiro-Wilk's normality test was utilized to test for such assumption. In order for the assumption of normality to be met, Shapiro-Wilks's test should not be significant (Keith, 2006), which was found to meet the assumption.

Once assumption testing was completed, analyses regarding the predictive nature of sexual behaviors and personality, as well as moderated effects of gender and health were conducted.

Predictive Analyses

The researcher utilized hierarchical regression analyses with moderated effects for the remaining research questions. For all hierarchical regressions, overall psychological well-being for 2011 was the dependent variable, and overall psychological well-being from 1993 was entered in the first step. The purpose of this was to model change in 2011 psychological well-being. In step two, the covariates were added, which included employment, net worth, and educational attainment. In the third steps, corresponding predictive variables were included, and later in the fourth steps the interaction variables were analyzed. Although the first two steps were replicated in all analyses, the outcome for the steps in the models differed due to the difference in the participants' response rates. The results are discussed below.

Research Question Two

How does sexual frequency and sexual satisfaction predict change in psychological well-being as individuals transition from middle adulthood to older adulthood?

2a. Increased sexual frequency will be positively associated with positive change in overall psychological well-being in the transition from middle adulthood to older adulthood.

2b. Increased sexual satisfaction will be positively associated with positive change in overall psychological well-being in the transition from middle adulthood to older adulthood.

Hierarchical multiple regressions were run to determine if the addition of educational attainment, net worth, and employment and then sexual frequency or sexual

satisfaction improved the prediction of change in overall psychological well-being over and above educational attainment, net worth, and employment alone. Prior to the analyses, bivariate correlations were conducted on all variables, see Table 7 for results of correlations between the control and predictive variables.

Results for the hierarchical regression assessing the predictive relationship of sexual frequency on change in overall psychological well-being are presented in Table 8, and results for the hierarchical regression assessing the predictive relationship of sexual satisfaction on change in overall psychological well-being is presented in Table 9. In the hierarchical regression assessing the predictive power of sexual frequency, the full model of educational attainment, net worth and employment (model 2) was statistically significant, $R^2 = .44$, $F(4, 1347) = 266.50$, $p < .001$. Although the full model was statistically significant, when assessing the covariates individually, only net worth ($\beta = .06$, $t = 3.01$, $p = .00$) and educational attainment ($\beta = .09$, $t = 4.37$, $p < .001$) were significant predictors, while employment status ($\beta = .01$, $t = .57$, $p = .57$) was not. The addition of sexual frequency to the prediction of change in overall psychological well-being (model 3) led to a statistically significant increase in R^2 (R^2 change = .002, $p = .03$), however 0% of additional variance was explained in this model. Even though model 3 remained statistically significant as a whole [$F(5, 1346) = 214.67$, $p = .03$], it is not supported as the strongest model due to no increase in variance explained. Additionally, model 3 explained 0% of unique variance above and beyond the other predictors ($sr^2 = .00$). Consistent with the previous model, net worth ($\beta = .06$, $t = 2.85$, $p = .01$) and educational attainment ($\beta = .09$, $t = 4.42$, $p < .001$) continued to be statistically significant, while employment status was the only covariate that was not significant ($\beta =$

.01, $t = .56$, $p = .57$). Although this analysis statistically supported the hypothesis regarding sexual frequency (2a) in that increased sexual frequency was positively associated with change in overall psychological well-being in the transition to older adulthood, there was not a meaningful amount of variance explained. Given the high volume of participants, it is likely that statistical significance is only due to a high amount of power. However, higher levels of education and net worth were associated positively with change in overall psychological well-being.

Table 7. Bivariate Correlations of Question 2 Variables

	11 WB	93 WB	Employ	Net Worth	Edu Attain	Sex Freq	Sex Sat
11 WB	--						
93 WB	.63**	--					
Employ	.07**	.06**	--				
Net Worth	.14**	.07**	.04**	--			
Edu Attain	.18**	.12**	.15**	.18**	--		
Sex Freq	.08**	.03	-.01	.06*	.01	--	
Sex Sat	.24**	.17**	.503	.07**	.02	.11**	--
M	3.79	3.79	.31	606647.26	1.46	1.02	2.25
SD	.61	.63	.46	11822225.6	.50	1.20	1.27

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

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

Note$_1$: 11 WB = Overall Psychological Well-Being in 2011; 93 WB = Overall Psychological Well-Being in 1993; Employ = Employment; Edu Attain = Educational Attainment; Sex Freq = Sexual Frequency; Sex Sat = Sexual Satisfaction.

Note$_2$: All variables are un-centered

Table 8. Summary of Hierarchical Regression Analysis for Sexual Frequency Predicting Change in Overall Psychological Well-Being (N = 1352)

Variable	Model 1				Model 2				Model 3			
	B	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2
1993 Psych WB	.64*	.02	.65	.43	.63*	.02	.64	.42	.63*	.02	.64	.42
Employment					.02	.03	.01	.00	.02	.03	.01	.00
Net Worth					.00*	.00	.06	.01	.00*	.00	.06	.01
Edu Attainment					.11*	.03	.09	.01	.11*	.03	.09	.01
Sexual Frequency									.02*	.01	.04	.00
R^2		.43				.44				.44		
Change in R^2		.43*				.02*				.00*		

Note$_1$*: 1993 Psych WB = Overall Psychological Well-Being in 1993; Edu Attainment = Educational Attainment; Sexual Sat = Sexual Satisfaction*

Note$_2$*: Sexual frequency was centered at its mean*

Note$_3$*: B = unstandardized coefficient; SE B = standard error for the unstandardized beta; β = standardized coefficient;* sr^2 *= semi-partial squared value*

*$p < .05$

When assessing the predictive power of sexual satisfaction, the full model of educational attainment, net worth and employment (model 2) was statistically significant, $R^2 = .44$, $F(4, 2229) = 430.62$, $p < .001$. Individually, net worth ($\beta = .07$, $t = 4.26$, $p < .001$) educational attainment ($\beta = .08$, $t = 4.58$, $p < .001$) were significant, however employment ($\beta = .01$, $t = .69$, $p = .49$) was not. The addition of sexual satisfaction to the prediction of change in overall psychological well-being (model 3) led to a statistically significant increase in R^2 (R^2 change = .02, $p < .001$), and the model remained statistically significant as a whole [$F(5, 2228) = 365.88$, $p < .001$]. Additionally, model 3 explained 3% of unique variance above and beyond the other predictors in the analysis, indicating that the results are both statistically significant and practically meaningful. Net worth ($\beta = .06$, $t = 3.76$, $p < .001$) and educational attainment ($\beta = .08$, $t = 4.75$, $p < .001$) continued to be statistically significant, while employment continued to be the only covariate that was not significant in the model ($\beta = .01$, $t = .44$, $p = .66$). This analysis supported the hypothesis regarding sexual satisfaction (2b) in that higher levels of sexual satisfaction was positively associated with change in overall psychological well-being in the transition to older adulthood. Sexual satisfaction specifically explained 2% additional variance in prediction overall psychological well-being. Additionally, higher levels of education and net worth were also associated positively with change in overall psychological well-being. Interestingly, while the effect continued to be small, the effect of sexual satisfaction was much larger than the effect of sexual frequency.

Table 9. Summary of Hierarchical Regression Analysis for Sexual Satisfaction Predicting Change in Overall Psychological Well-Being (N = 2234)

Variable	Model 1				Model 2				Model 3			
	B	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2
1993 Psych WB	.64*	.02	.65	.42	.63*	.02	.64	.41	.61*	.02	.62	.40
Employment					.02	.02	.01	.00	.01	.02	.01	.00
Net Worth					.00*	.00	.07	.01	.00*	.00	.06	.01
Edu Attainment					.01*	.02	.08	.01	.01*	.02	.08	.01
Sexual Sat									.06*	.01	.13	.03
R^2	.423				.435				.451			
Change in R^2	.423*				.011*				.016*			

Note₁: 1993 Psych WB = Overall Psychological Well-Being in 1993; Edu Attainment = Educational Attainment; Sexual Sat = Sexual Satisfaction

Note: Sexual satisfaction was centered at its mean

Note₃: B = unstandardized coefficient; SE B = standard error for the unstandardized beta; β = standardized coefficient; sr^2 = semi-partial squared value

*$p < .05$

Research Question Three

How does personality predict change in psychological well-being as individuals transition from middle adulthood to older adulthood?

3a. Extraversion, agreeableness, and openness will be positively associated with positive change in overall psychological well-being in the transition from middle adulthood to older adulthood.

3b. Neuroticism and conscientiousness and will be negatively associated with positive change in overall psychological well-being in the transition from middle adulthood to older adulthood.

A hierarchical multiple regression was run to determine if the addition of educational attainment, net worth, and employment and then of the Big Five personality traits improved the prediction of change in overall psychological well-being in the transition to old age. Prior to the analyses, bivariate correlations were conducted on all variables, see Table 10 for results of correlations between the control and predictive variables.

Table 10. Bivariate Correlations of Question 3 Variables

	11 WB	93 WB	Employ	Net Worth	Edu Attain	Open	Consc	Extra	Nero	Agree
11 WB	--									
93 WB	.63**	--								
Employ	.07**	.06**	--							
Net Worth	.14**	.07**	.04**	--						
Edu Attain	.18**	.12**	.15**	.18**	--					
Open	.18**	.17**	.33**	-.02	.39**	--				
Consc	.29**	.22**	.30**	-.04**	.28**	.75**	--			
Extra	.29**	.25**	.29**	-.03*	.26**	.73**	.68**	--		
Neuro	-.32**	-.26**	.13**	-.10**	.09**	.41**	.32**	.31**	--	
Agree	.27**	.19**	.29**	-.08**	.26**	.75**	.76**	.68**	.31**	--
M	3.79	3.79	.31	606647.26	1.46	3.95	5.13	4.17	3.26	5.20
SD	.61	.63	.46	11822225.6	.50	2.02	1.62	1.74	1.46	1.62

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

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

Note$_1$: 11 WB = Overall Psychological Well-Being in 2011; 93 WB = Overall Psychological Well-Being in 1993; Employ = Employment; Edu Attain = Educational Attainment; Open = Openness, Consc = Conscientiousness; Extra = Extraversion; Neuro = Neuroticism; Agree = Agreeableness

Note$_2$: All variables are un-centered

Results for the hierarchical regression assessing the predictive relationship of personality on change in overall psychological well-being are presented in Table 11. The full model of educational attainment, net worth, and employment (model 2) was statistically significant, $R^2 = .43$, $F(4, 4372) = 821.18$, $p < .001$, however individually only net worth ($\beta = .07$, $t = 5.75$, $p < .001$) and educational attainment ($\beta = .08$, $t = 6.97$, $p < .001$) were significant predictors, while employment ($\beta = .01$, $t = .64$, $p = .52$) was not. The addition of the Big Five personality variables to the prediction of change in overall psychological well-being (model 3) led to a statistically significant increase in R^2 (R^2 change = .07, $p < .001$), and the model remained statistically significant as a whole [$F(9, 4367) = 473.53$, $p < .001$]. Assessing the variables of model 3 individually, all individual predictors were statistically significant, including employment which was not significant in the previous model ($\beta = -.03$, $t = -2.52$, $p = .01$). Looking at the Big Five personality traits specifically, openness ($\beta = -.10$, $t = -5.24$, $p < .001$) and neuroticism ($\beta = -.21$, $t = -17.01$, $p < .001$) had a negative correlation with change in overall psychological well-being, while conscientiousness ($\beta = .12$, $t = 6.85$, $p < .001$), extraversion ($\beta = .12$, $t = 7.56$, $p < .001$), and agreeableness ($\beta = .12$, $t = 6.78$, $p < .001$) positively correlated to overall psychological well-being. All personality variables explained 1% of unique variance above and beyond the other predictors except for neuroticism, which explained 6% of unique variance above and beyond the other predictors. This analysis partially supported the hypotheses (3a and 3b) in that overall, personality predicted change in overall well-being, however, the association between the specific personality traits were only partially supported. Extraversion, openness, and agreeableness were hypothesized to be positively related to change in overall

psychological well-being, and neuroticism and conscientiousness were hypothesized to be negatively related. Results indicated that neuroticism and openness were negatively associated with greater well-being, while conscientiousness, extraversion, and agreeableness were positively associated with change in overall well-being. Additionally, results indicated that neuroticism specifically explained a considerable more unique variance over the other personality variables analyzed.

Table 11. Summary of Hierarchical Regression Analysis for Personality Predicting Change in Overall Psychological Well-Being (N = 4377)

Variable	Model 1				Model 2				Model 3			
	B	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2
1993 Psych WB	.63*	.01	.65	.42	.61*	.01	.63	.41	.49*	.01	.50	.28
Employment					.01	.02	.01	.01	-.04*	.02	-.03	.01
Net Worth					.00*	.00	.07	.00	.00*	.00	.08	.00
Edu Attainment					.10*	.01	.08	.01	.08*	.01	.07	.01
Openness									-.03*	.01	-.10	.01
Conscientiousness									.05*	.01	.12	.01
Extraversion									.05*	.01	.12	.01
Neuroticism									-.10*	.01	-.21	.06
Agreeableness									.05*	.01	.12	.01
R^2		.42				.43				.50		
Change in R^2		.42*				.01*				.07*		

Note₁: 1993 Psych WB = Overall Psychological Well-Being in 1993; Edu Attainment = Educational Attainment;
Note₂: Openness, Conscientiousness, Extraversion, Neuroticism, and Agreeableness were centered at their means
Note₃: B = unstandardized coefficient; SE B = standard error for the unstandardized beta; β = standardized coefficient; sr^2 *= semi-partial squared value*
*$p < .05$

Research Question Four

To what extent does gender and physical health moderate the relationship between sexual frequency and overall psychological well-being in the transition to older adulthood?

4a. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and sexual frequency will be stronger in males than in females.

4b. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and sexual frequency will be stronger in those who perceive themselves to have higher levels of physical health.

Hierarchical multiple regressions were run to assess the statistical significance of the interaction terms between gender and sexual frequency as well as physical health and sexual frequency. This was done to determine if the interaction terms provided better prediction than gender, health, sexual frequency alone. Separate regression models were constructed for the moderated effect of gender and health. Prior to the analyses, bivariate correlations were conducted on all variables, see Table 12 for results of correlations between the covariate, predictive, and moderation variables.

Table 12. Bivariate Correlations of Question 5 Variables

	11 WB	93 WB	Employ	Net Worth	Edu Attain	Gender	Health	Sex Freq
11 WB	--							
93 WB	.63**	--						
Employ	.07**	.06**	--					
Net Worth	.14**	.07**	.04**	--				
Edu Attain	.18**	.12**	.15**	.18**	--			
Gender	.06**	.05**	-.14**	-.12**	-.12**	--		
Health	.32**	.20**	.11**	.11**	.17**	.02	--	
Sex Freq	.08**	.03	-.01	.06*	.01	-.01	.06*	--
M	3.79	3.79	.31	606647.26	1.46	.52	2.10	1.02
SD	.61	.63	.46	11822225.6	.50	.50	.70	1.20

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

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

Note$_1$: 11 WB = Overall Psychological Well-Being in 2011; 93 WB = Overall Psychological Well-Being in 1993; Employ = Employment; Edu Attain = Educational Attainment; Sex Freq = Sexual Frequency

Note$_2$: All variables are un-centered

Results for the hierarchical regressions assessing whether gender moderated the relationship between sexual frequency and change in overall psychological well-being are presented first. See Table 13 for details of the results of gender moderating the effect of sexual frequency. In the final model (model 5) which assessed the interaction between gender and sexual frequency, the interaction did not contribute significantly to the model [$F(7, 1344) = 153.55$, $p = .90$, $R^2 = .44$]. Thus, the hypothesis regarding the moderation of gender on the relationship between sexual frequency and change in overall psychological well-being (4a) was not supported. The full model of educational attainment, net worth and employment (model 2) was statistically significant, $R^2 = .44$, $F(4, 1347) = 266.50$, $p < .001$. The addition of gender to the prediction of change in overall psychological well-being (model 3) was not statistically significant [$F(5, 1346) = 213.63$, $p = .20$, $sr^2 = .00$]. However, in the following model (model 4), the addition of the sexual frequency led to a statistically significant increase in R^2 (R^2 change = .00, $p = .03$), and the full model was statistically significant [$F(6, 1345) = 179.27$, $p = .03$, $R^2 = .44$], however the model accounted for 0% of additional variance, and sexual frequency accounted for 0% of unique variance above and beyond the other predictors. Model 2 seems to be the strongest model in the analysis, explaining 2% unique variance than the previous model. When analyzing the model variables independently in model 2, net worth ($\beta = .06$, $t = 2.98$, $p = .00$, $sr^2 = .01$) and educational attainment ($\beta = .09$, $t = 4.51$, $p < .001$, $sr^2 = .01$) were significant predictors, however employment ($\beta = .01$, $t = .64$, $p = .52$, $sr^2 = .00$) was not significant in the model.

Table 13. Summary of Hierarchical Regression Analysis for Gender Moderating Relationship between Sexual Frequency Predicting Change in Overall Psychological Well-Being (N = 1352)

Variable	Model 1				Model 2				Model 3				Model 4				Model 5			
	B	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2
1993 Psych WB	.64*	.02	.65	.43	.63*	.02	.64	.42	.63*	.02	.64	.42	.62*	.02	.64	.42	.62*	.02	.64	.42
Employment					.02	.03	.01	.00	.02	.03	.02	.00	.02	.03	.02	.00	.02	.03	.02	.00
Net Worth					.00*	.00	.06	.01	.00*	.00	.07	.01	.00*	.00	.06	.01	.00*	.00	.06	.01
Edu Attainment					.11*	.03	.09	.01	.11*	.03	.09	.02	.11*	.03	.10	.02	.11*	.03	.10	.02
Gender									.03	.03	.03	.00	.03	.03	.03	.01	.03	.03	.03	.00
Sexual Frequency													.02*	.01	.04	.00	.02	.02	.05	.00
Gen x Sex Freq																	-.00	.02	-.00	.00
R^2	.427				.442				.442				.444				.444			
Change in R^2	.427*				.015*				.001				.002*				.000			

Note$_1$: 1993 Psych WB = Overall Psychological Well-Being in 1993; Edu Attainment = Educational Attainment; Gen x Sex Freq = Interaction between Gender and Sexual Frequency

Note$_2$: Sexual frequency was centered at its mean

Note$_3$: B = unstandardized coefficient; SE B = standard error for the unstandardized beta; β = standardized coefficient; sr^2 = semi-partial squared value

*$p < .05$.

Results for the hierarchical regressions assessing whether health moderated the relationship between sexual frequency and change in overall psychological well-being are presented in Table 14. In the final model (model 5), the addition of the interaction of health and sexual frequency was not a statistically significant model (R^2 = .47, F(7, 1337) = 170.68, p = .34). Thus, the hypothesis regarding the moderation of health on the relationship between sexual frequency and change in overall psychological well-being (4b) was not supported. In the full model of educational attainment, net worth and employment (model 2) was statistically significant, R^2 = .45, F(4, 1340) = 269.58, p < .001. The addition of health to the prediction of change in overall psychological well-being (model 3) led to a statistically significant increase in R^2 (R^2 change = .02, p < .001), and the model remained statistically significant as a whole [F(5, 1399) = 237.77, p < .001]. In the next model (models 4), the addition of sexual frequency (R^2 = .47, F(6, 1338) = 198.99, p = .08) was not statistically significant. Model 3, with the covariates and the inclusion of health, was the strongest predictor of overall change in psychological well-being, accounting for 2% unique variance. When assessing the variables independently in the model, health (β = .16, t = 7.85, p < .001) was the most prevalent factor predicting psychological well-being, accounting for 4% unique variation above and beyond the other predictors. Net worth (β = .05, t = .2.66, p = .01, sr^2 = .01) and educational attainment (β = .07, t = 3.32, p = .001, sr^2 = .01) were also statistically significant predictors, however employment (β = .01, t = .64, p = .52, sr^2 = .00) was not significant in the model.

Table 14. Summary of Hierarchical Regression Analysis for Health Moderating Relationship between Sexual Frequency Predicting Change in Overall Psychological Well-Being (N = 1345)

Variable	Model 1				Model 2				Model 3				Model 4				Model 5			
	B	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2
1993 Psych WB	.64*	.02	.66	.43	.63*	.02	.65	.43	.60*	.02	.62	.40	.56*	.02	.61	.40	.59*	.02	.61	.40
Employment					.01	.03	.01	.00	.00	.03	.00	.00	.00	.03	.00	.00	.00	.03	.00	.00
Net Worth					.00*	.00	.06	.01	.00*	.00	.05	.01	.00*	.00	.05	.01	.00*	.00	.05	.01
Edu Attainment					.11*	.03	.09	.01	.08*	.03	.07	.01	.08*	.03	.07	.01	.08*	.03	.07	.01
Health									.15*	.02	.16	.04	.15*	.02	.16	.04	.15*	.02	.16	.04
Sexual Frequency													.02	.01	.04	.00	.02	.01	.03	.00
Health x Sex Freq																	.01	.02	.02	.00
R^2			.432				.446				.470				.472				.472	
Change in R^2			.432*				.014*				.024*				.001				.000	

Note₁: 1993 Psych WB = Overall Psychological Well-Being in 1993; Edu Attainment = Educational Attainment; Health x Sex Freq = Interaction between Health and Sexual Frequency

Note₂: Health and Sexual frequency were centered at their means

Note₃: B = unstandardized coefficient; SE B = standard error for the unstandardized beta; β = standardized coefficient; sr^2 = semi-partial squared value

*$p < .05$.

Research Question Five

To what extent does gender and physical health moderate the relationship between sexual satisfaction and psychological well-being in the transition to older adulthood?

5a. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and sexual satisfaction will be stronger in males than in females.

5b. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and sexual satisfaction will be stronger in those who perceive themselves to have higher levels of physical health.

Hierarchical multiple regressions were run to assess the statistical significance of the interaction terms between gender and sexual satisfaction as well as physical health and sexual satisfaction. This was done to determine if the interaction terms provided better prediction than gender, health, and sexual satisfaction alone. Separate regression models were constructed for the moderated effect of gender and health. Prior to the analyses, bivariate correlations were

conducted on all variables, see Table 15 for results of correlations between the covariate, predictive, and moderation variables.

Table 15. Bivariate Correlations of Question 5 Variables

	11 WB	93 WB	Employ	Net Worth	Edu Attain	Gender	Health	Sex Sat
11 WB	--							
93 WB	.63**	--						
Employ	.07**	.06**	--					
Net Worth	.14**	.07**	.04**	--				
Edu Attain	.18**	.12**	.15**	.18**	--			
Gender	.06**	.05**	-.14**	-.12**	-.12**	--		
Health	.32**	.20**	.11**	.11**	.17**	.02	--	
Sex Sat	.24**	.17**	.03	.07**	.02	-.07**	.17**	--
M	3.79	3.79	.31	606647.26	1.46	.52	2.10	2.25
SD	.61	.63	.46	11822225.6	.50	.50	.70	1.27

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

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

Note$_1$: 11 WB = Overall Psychological Well-Being in 2011; 93 WB = Overall Psychological Well-Being in 1993; Employ = Employment; Edu Attain = Educational Attainment; Sex Sat = Sexual Satisfaction

Note$_2$: All variables are un-centered

Results for the hierarchical regressions assessing whether gender moderated the relationship between sexual satisfaction and change in overall psychological well-being are presented first. See Table 16 for details of the results of gender moderating the effect of sexual satisfaction. In the hierarchical regression assessing the moderated effect of gender on the relationship between sexual satisfaction and change in overall psychological well-being, the full model with the addition of the interaction between gender and sexual satisfaction (model 5) did not contribute significantly to the model (R^2 = .45, F(7, 2226) = 263.87, p = .08). Thus, the hypothesis regarding the moderation of gender on the relationship between sexual satisfaction and change in overall psychological well-being (5a) was not supported. The full model of educational attainment, net worth and employment (model 2) was statistically significant, R^2 = .44, F(4, 2229) = 430.62, p < .001. The addition of gender to the prediction of change in overall psychological well-being (model 3) led to a statistically significant increase in R^2 (R^2 change = .001, p = .04), and the model remained statistically significant as a whole [F(5, 2228) = 345.86, p = .04]. In the next model (model 4), the addition of sexual satisfaction also led to a statistically significant increase in R^2 (R^2 change = .02, p < .001), and the model remained statistically significant as a whole [F(6, 2227) = 307.08, p < .001]. Model 4 was the strongest prediction model, with the inclusion of the covariates and gender and sexual satisfaction separately accounting for 2% of unique variance. When analyzing the model variables in model 4, all variables were statistically significant with the exception of employment (β = .01, t = .74, p = .46). Sexual satisfaction accounted for 3% of unique variance above and beyond the other predictors (β = .13, t = 8.01, p < .001, sr^2 = .03), and net worth (β = .06, t = 3.98, p < .001, sr^2 = .01) and

educational attainment (β = .08, $t = 4.94$, $p < .001$, $sr^2 = .01$) accounted for 1% unique variance above and beyond the other predictors. Although significant, gender accounted for 0% unique variance above and beyond the other predictors.

Table 16. Summary of Hierarchical Regression Analysis for Gender Moderating Relationship between Sexual Satisfaction Predicting Change in Overall Psychological Well-Being (N = 2234)

Variable	Model 1				Model 2				Model 3				Model 4				Model 5			
	B	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2
1993 Psych WB	.64*	.02	.65	.42	.63*	.02	.64	.41	.62*	.02	.64	.41	.60*	.02	.61	.40	.60*	.02	.61	.40
Employment					.01	.02	.01	.00	.02	.02	.02	.00	.02	.02	.01	.00	.02	.02	.01	.00
Net Worth					.00*	.00	.07	.01	.00*	.00	.07	.01	.00*	.00	.06	.01	.00*	.00	.06	.01
Edu Attainment					.09*	.02	.08	.01	.09*	.02	.08	.01	.09*	.02	.08	.01	.09*	.02	.08	.01
Gender									.04*	.02	.03	.00	.05*	.02	.04	.00	.05*	.02	.05	.00
Sexual Satisfaction													.06*	.01	.13	.03	.05*	.01	.11	.01
Gen x Sex Sat																	.03	.02	.04	.00
R^2	.423				.436				.437				.453				.452			
Change in R^2	.423*				.012*				.001*				.016*				.001			

Note$_1$: 1993 Psych WB = Overall Psychological Well-Being in 1993; Edu Attainment = Educational Attainment; Gen x Sex Sat = Interaction between Gender and Sexual Satisfaction

Note$_2$: Sexual Satisfaction was centered at its mean

Note$_3$: B = unstandardized coefficient; SE B = standard error for the unstandardized beta; β = standardized coefficient; sr^2 = semi-partial squared value

*$p < .05$.

Results for the hierarchical regressions assessing whether health moderated the relationship between sexual satisfaction and change in overall psychological well-being are presented in Table 17. In the final model (model 5) analyzing the interaction effects, the addition of health and sexual satisfaction did not contribute significantly to the model (R^2 = .47, F(7, 2209) = 279.04, p = .07). In model 2, the full model of educational attainment, net worth and employment was statistically significant, R^2 = .44, F(4, 2212) = 431.07, p < .001. The addition of health to the prediction of change in overall psychological well-being (model 3) led to a statistically significant increase in R^2 (R^2 change = .02, p < .001), and the model remained statistically significant as a whole [F(5, 2211) = 372.645, p < .001]. Thus, the hypothesis regarding the moderation of health on the relationship between sexual satisfaction and change in overall psychological well-being (5b) was not supported. Model 4 was the strongest prediction model, with the inclusion of health and sexual satisfaction separately. When analyzing the model variables in model 4, sexual satisfaction (β = .11, t = 6.82, p < .001) explained 1% of additional variance ad 2% unique variance above and beyond the other predictors. With the exception of employment (β = -.00, t = -.14, p = .89, sr^2 = .00), all variables were statistically significant. Health (β = .13, t = 7.97, p < .001) accounted for 3% of unique variance above and beyond the other predictors, and net worth (β = .05, t = 3.21, p < .001), educational attainment (β = .62, t = 3.89, p < .001) accounted for 1% unique variance above and beyond the other predictors.

Table 17. Summary of Hierarchical Regression Analysis for Health Moderating Relationship between Sexual Satisfaction Predicting Change in Overall Psychological Well-Being (N = 2217)

Variable	Model 1				Model 2				Model 3				Model 4				Model 5			
	B	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2
1993 Psych WB	.64*	.02	.65	.43	.63*	.02	.64	.42	.60*	.02	.61	.39	.59*	.02	.60	.38	.59*	.02	.60	.39
Employment					.01	.02	.01	.00	.00	.02	.00	.00	-.00	.02	-.00	.00	-.00	.02	-.00	.00
Net Worth					.00*	.00	.07	.01	.00*	.00	.06	.01	.00*	.00	.05	.01	.00*	.00	.05	.01
Edu Attainment					.09*	.02	.08	.01	.07*	.02	.06	.01	.07*	.02	.06	.01	.07*	.02	.06	.01
Health									.13*	.01	.14	.03	.11*	.01	.13	.03	.11*	.01	.13	.03
Sexual Satisfaction													.05*	.01	.11	.02	.05*	.01	.11	.02
Health x Sex Sat																	-.02	.01	-.03	.00
R^2			.426				.438				.457				.467				.468	
Change in R^2			.426*				.012*				.019*				.011*				.001	

Note₁: 1993 Psych WB = Overall Psychological Well-Being in 1993; Edu Attainment = Educational Attainment; Health x Sex Sat = Interaction between Health and Sexual Satisfaction

Note₂: Health and Sexual Satisfaction were centered at their means

Note₃: B = unstandardized coefficient; SE B = standard error for the unstandardized beta; β = standardized coefficient; sr^2 = semi-partial squared value

*$p < .05$.

Research Question Six

To what extent does gender and physical health moderate the relationship between personality and psychological well-being over time?

6a. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and extraversion, openness, and agreeableness will be stronger in males than in females.

6b. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and neuroticism and conscientiousness will be stronger in females than in males.

6c. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and extraversion, openness, and agreeableness will be stronger in those who perceive themselves to have higher levels of physical health.

6d. The relationship between change in overall psychological well-being from in the transition from middle adulthood to older adulthood and neuroticism and conscientiousness will be stronger in those who perceive themselves to have lower levels of physical health.

Hierarchical multiple regression models were constructed to assess whether there was an increase in variation by the addition of interaction terms of gender and personality, and health and personality, on the main effects of the model. Separate regression models were constructed for the moderated effect of gender and health. Prior to the analyses, bivariate correlations were conducted on all variable, see Table 18 for results of correlations between the covariate, predictive, and moderation variables

Table 18. Bivariate Correlations of Question 6 Variables

	11 WB	93 WB	Employ	Net Worth	Edu Attain	Gender	Health	Open	Consc	Extra	Neuro	Agree
11 WB	--											
93 WB	.63**	--										
Employ	.07**	.06**	--									
Net Worth	.14**	.07**	.04**	--								
Edu Attain	.18**	.12**	.15**	.18**	--							
Gender	.06*	.05**	-.14**	-.12**	-.12**	--						
Health	.32**	.20**	.11**	.11**	.17**	.02	--					
Open	.18**	.17**	.33**	-.02	.39**	-.06**	.14**	--				
Consc	.29**	.22**	.30**	-.04**	.28**	-.03*	.18**	.75**	--			
Extra	.29**	.25**	.29**	-.03*	.26**	-.01	.16**	.73**	.68**	--		
Neuro	-.32**	-.26**	.13**	-.10**	.09**	.04**	-.11**	.41**	.32**	.31**	--	
Agree	.27**	.19**	.29**	-.08**	.26**	.05**	.15**	.75**	.76**	.68**	.31**	--
M	3.79	3.79	.31	606647.26	1.46	.52	2.10	3.95	5.13	4.17	3.26	5.20
SD	.63	.63	.46	11822225.6	.50	.50	.70	2.02	1.62	1.74	1.46	1.62

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

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

Note$_1$: 11 WB = Overall Psychological Well-Being in 2011; 93 WB = Overall Psychological Well-Being in 1993; Employ = Employment; Edu Attain = Educational Attainment; Open = Openness, Consc = Conscientiousness; Extra = Extraversion; Neuro = Neuroticism; Agree = Agreeableness

Note$_2$: All variables are un-centered

Results for the hierarchical regressions assessing whether gender moderated the relationship between personality and change in overall psychological well-being are presented first. See Table 19 for details of the results of gender moderating the effects of personality. In assessing the moderated effects of gender with the Big Five personality traits (model 5), the overall model did not lead to a statistically significant increase in R^2 (R^2 = .50, R^2 change = .00, p = .23), nor was the whole model significant [F(15, 4361) = 287.18, p = .23], indicating that gender did not significantly moderate the effect personality on the change in overall psychological well-being. However, when analyzing the individual interaction terms of the model, the interaction of gender and neuroticism were statistically significant and had a negative association with change in overall psychological well-being (β = -.03, t = -2.08, p = .04). Of note, however, the interaction between gender and neuroticism accounted for 0% of unique variance above and beyond the other predictors. With the statistically significant results, hypothesis 6a was not supported, however results from hypothesis 6b were partially supported.

The full model of educational attainment, net worth and employment (model 2) was statistically significant, R^2 = .43, F(4, 4372) = 821.18, p < .001. The addition of gender to the prediction of change in overall psychological well-being (model 3) led to a statistically significant increase in R^2 (R^2 change = .00, p < .001) and remained statistically significant as a whole [F(5, 4371) = 662.19, p < .001]. In the next model (model 4), the addition of the Big Five personality traits also led to a statistically significant increase in R^2 (R^2 change = .07, p < .001) and remained statistically significant as a whole [F(10, 4366) = 429.89, p < .001], indicating that it was the strongest model in the analysis. In model 4, all individual variables were statistically significant. Beta

coefficients for employment (β = -.02, t = -1.98, p = .05), openness (β = -.10, t = -4.91, p < .001), and neuroticism (β = -.22, t = -17.35, p < .001) all indicated a negative relationship; while net worth (β = .08, t = 7.24, p < .001), educational attainment (β = .07, t = 6.09, p < .001), gender (β = .05, t = 4.39, p < .001), extraversion (β = .12, t = 7.54, p < .001), agreeableness (β = .11, t = 6.13, p < .001), and conscientiousness (β = .13, t = 7.15, p < .001), indicated a positive relationship with change in overall psychological well-being. All personality variable except for neuroticism accounted for 1% unique variation above and beyond the other predictors. Neuroticism, however, accounted for 7% unique variation above and beyond the other predictors, indicating that neuroticism is a stronger predictor of change in overall psychological well-being that the other personality variables. So, when not accounting for moderating effects, results suggested that those who were unemployed, had lower levels of openness and neuroticism, and were female had higher levels of overall psychological well-being. Additionally, results pointed to those with higher levels of education and net worth, and individuals with higher levels of extraversion, agreeableness, and conscientiousness as having higher levels of overall psychological well-being between 1993 and 2011.

A follow-up analysis was conducted to interpret the significant interaction effect between gender and neuroticism, see figure 1. The interaction effects were plotted based upon procedures by Aiken and West (1991). Based upon the results, the effect of neuroticism on change in overall psychological well-being had a stronger effect for women than for men.

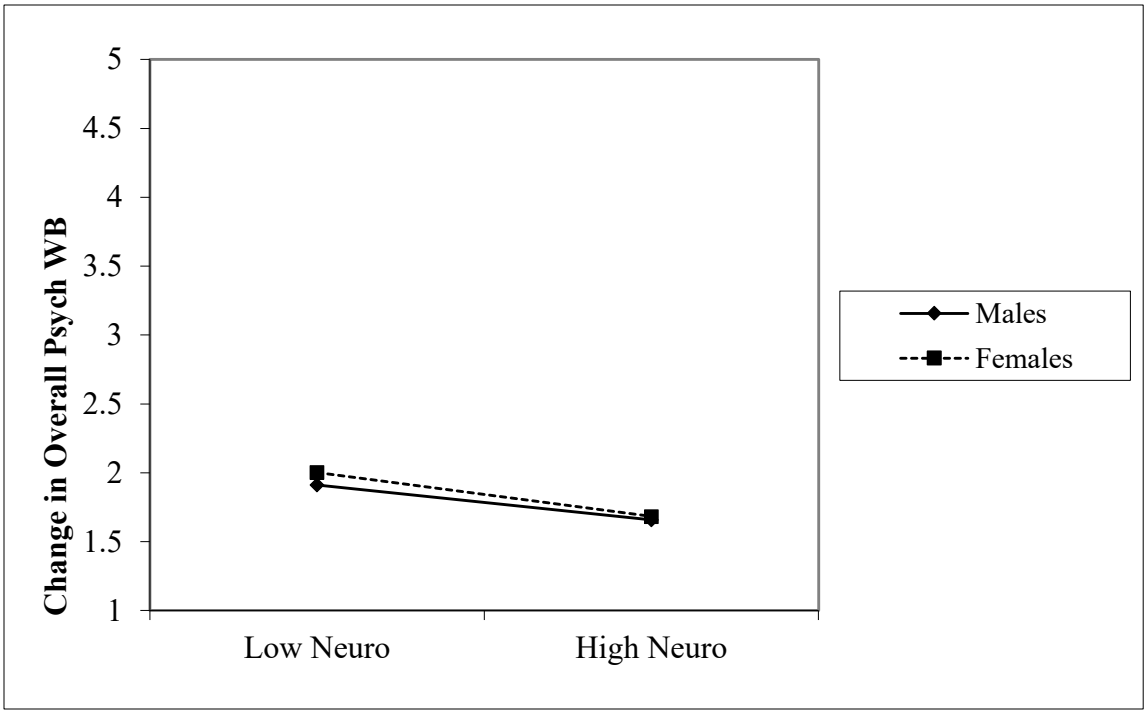

Figure 1. Interaction effect of Gender on Neuroticism and Change in Overall Psychological Well-Being

Table 19. Summary of Hierarchical Regression Analysis for Gender Moderating Relationship between Personality Predicting Change in Overall Psychological Well-Being (N = 4343)

Variable	Model 1				Model 2				Model 3				Model 4				Model 5			
	B	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2
1993 Psych WB	.63*	.01	.65	.42	.61*	.01	.63	.41	.61*	.01	.63	.40	.49*	.01	.50	.28	.49*	.01	.50	.27
Employment					.01	.02	.01	.01	.02	.02	.01	.01	-.03*	.02	-.02	.01	.03*	.02	-.02	.01
Net Worth					.00*	.00	.07	.00	.00*	.00	.07	.00	.00*	.00	.08	.00	.00*	.00	.08	.00
Edu Attainment					.01*	.01	.08	.01	.10*	.01	.09	.01	.09*	.01	.07	.01	.09*	.01	.07	.01
Gender									.06*	.01	.05	.00	.06*	.01	.05	.00	.06*	.01	.05	.00
Openness													-.03*	.01	-.10	.01	.04*	.01	-.12	.00
Conscientiousness													.05*	.01	.13	.01	.06*	.01	.15	.01
Extraversion													.05*	.0	.12	.01	.05*	.01	.14	.01
Neuroticism													-.10*	.01	-.22	.07	.09*	.01	-.19	.03
Agreeableness													.05*	.01	.11	.01	.04*	.01	.10	.00
Open x Gender																	.01	.01	.03	.00
Consc x Gender																	.01	.02	-.02	.00
Extra x Gender																	.01	.01	-.02	.00
Neuro x Gender																	.02*	.01	-.03	.00
Agree x Gender																	.01	.02	.02	.00
R^2			.42				.43				.43				.50				.50	
Change in R^2			.42*				.01*				.00*				.07*				.00	

Note$_1$*: Open x Gender = Interaction between Openness and Gender; Consc x Gender = Interaction between Conscientiousness and Gender; Extra x Gender = Interaction between Extraversion and Gender; Neuro x Gender = Interaction between Neuroticism and Gender; Agree x Gender = Interaction between Agreeableness and Gender;*

Note$_2$*: Openness, Conscientiousness, Extraversion, Neuroticism, and Agreeableness were centered at their means.*

Note$_3$*: B = unstandardized coefficient; SE B = standard error for the unstandardized beta; β = standardized coefficient;* sr^2 *= semi-partial squared value*

*$p < .05$

Results for the hierarchical regressions assessing whether health moderated the relationship between personality and change in overall psychological well-being are presented in Table 20. In assessing the moderated effects of health with the Big Five personality traits (model 5), the overall model lead to a statistically significant increase in R^2 ($R^2 = .52$, R^2 change = .01, $p < .001$), with the complete model remaining significant [$F(15, 4327) = 309.59$, $p < .001$], indicating that health significantly moderates the effect personality on change in overall psychological well-being. Although the whole model is statistically significant, it does not seem to be meaningfully significant, as the full model explains 1% of unique variance, and the interaction effects account for 0% of unique variation above and beyond the other predictors. However, with statistically significant results this model indicates that the association between personality and change in overall psychological well-being varies as a function of how healthy one is. In assessing the predictive variables individually, employment (β = -.03, $t = -3.04$, $p = .00$, $sr^2 = .01$), openness (β = -.08, $t = -4.11$, $p < .001$, $sr^2 = .00$), and neuroticism (β = -.21, $t = -16.31$, $p < .001$, $sr^2 = .06$) had a negative association with change in overall psychological well-being, while net worth (β = .07, $t = 5.91$, $p < .01$, $sr^2 = .00$), educational attainment (β = .05, $t = 4.56$, $p < .001$, $sr^2 = .01$), health (β = .12, $t = 10.18$, $p < .001$, $sr^2 = .02$), conscientiousness (β = .10, $t = 5.80$, $p < .001$, $sr^2 = .01$), extraversion (β = .13, $t = 7.72$, $p < .001$, $sr^2 = .01$), and agreeableness (β = .13, $t = 7.13$, $p < .001$, $sr^2 = .01$) had a positive association with change in overall psychological well-being. In analyzing the individual interaction terms of the model, the only statistically significant interaction terms were between health and extraversion (β = -.06, $t = -3.43$, $p = .00$, $sr^2 = .00$) and health and neuroticism (β = .05, $t = 4.17$, $p < .001$, $sr^2 = .01$). The interaction between health and

openness (β = -.02, t = -.95, p = .34, sr^2 = .00), health and conscientiousness (β = -.01, t = .25, p = .80, sr^2 = .00), and health and agreeableness (β = -.03, t = -1.83, p = .07, sr^2 = .00) were not statistically significant. Statistically significant indicate that hypothesis 6c and 6d were partially supported, however if analyzing meaningful effects, the hypotheses would not be supported.

The full model of educational attainment, net worth and employment (model 2) was statistically significant, R^2 = .43, F(4, 4338) = 8224.90, p < .001. The addition of health to the prediction of change in overall psychological well-being (model 3) led to a statistically significant increase in R^2 (R^2 change = .03, p < .001) and remained statistically significant as a whole [F(5, 4337) = 736.71, p < .001]. In the next model (model 4), the addition of the Big Five personality traits also led to a statistically significant increase in R^2 (R^2 change = .05, p < .001) and remained statistically significant as a whole [F(10, 4332) = 451.04, p < .001], indicating that it was the strongest model in the analysis. All variables in model 4 were statistically significant. Beta coefficients for employment (β = -.03, t = -2.90, p = .00), openness (β = -.10, t = -5.04, p < .001), and neuroticism (β = -.19, t = -15.29, p < .001) all indicated a negative relationship; while net worth (β = .07, t = 5.93, p < .001), educational attainment (β = .06, t = 4.74, p < .001), health (β = .13, t = 11.34, p < .001), conscientiousness (β = .10, t = 5.67, p < .001), extraversion (β = .11, t = 6.98, p < .001), and agreeableness (β = .12, t = 6.76, p < .001), indicated a positive relationship with change in overall psychological well-being. Health accounted for 3% of unique variance above and beyond the other predictors, and neuroticism accounted for 5% of unique variance above and beyond the other predictors.

Openness, conscientiousness, extraversion, and agreeableness all accounted for 1% of unique variance above and beyond the other predictors.

Given that statistically significant results were found for two interaction effects, follow-up analysis were conducted to interpret the significant interaction effect between health and extraversion as well as the significant interaction effect of health and neuroticism on overall change in psychological well-being; see figures 2 and 3. The interaction effects were plotted based upon procedures by Aiken and West (1991). As seen in the plot, the influence in one's extraversion or neuroticism differed depending on health status. Regarding extraversion, the positive effect of extraversion seemed to only exist for those in good health. Conversely, regarding neuroticism, the negative effect of neuroticism was stronger for those in poor health.

Table 20. Summary of Hierarchical Regression Analysis for Health Moderating Relationship between Personality Predicting Change in Overall Psychological Well-Being (N = 4377)

Variable	Model 1				Model 2				Model 3				Model 4				Model 5			
	B	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2	*B*	*SE B*	*β*	sr^2
1993 Psych WB	.63*	.01	.65	.42	.62*	.01	.63	.41	.59*	.01	.60	.39	.48*	.01	.50	.28	.48*	.01	.49	.28
Employment					.01	.02	.01	.01	-.00	.02	-.00	.01	.04*	.02	-.03	.01	-.04*	.02	-.03	.01
Net Worth					.00*	.00	.07	.00	.00*	.00	.05	.00	.00*	.00	.07	.00	.00*	.00	.07	.00
Edu Attainment					.10*	.01	.08	.01	.07*	.01	.06	.01	.07*	.01	.06	.01	.06*	.01	.05	.01
Health									.05*	.01	.17	.05	.11*	.01	.13	.03	.10*	.01	.12	.02
Openness													.03*	.01	-.10	.01	-.03*	.01	-.08	.00
Conscientiousness													.04*	.01	.10	.01	.04*	.01	.10	.01
Extraversion													.04*	.01	.11	.01	.05*	.01	.13	.01
Neuroticism													.09*	.01	-.19	.05	-.09*	.01	-.21	.06
Agreeableness													.05*	.01	.12	.01	.05*	.01	.13	.01
Open x Health																	-.01	.01	-.02	.00
Consc x Health																	.00	.01	.01	.00
Extra x Health																	-.03*	.01	-.06	.00
Neuro x Health																	.03*	.01	.05	.00
Agree x Health																	-.02	.01	-.03	.00
R^2			.42				.43				.46				.51				.52	
Change in R^2			.42*				.01*				.03*				.05*				.01*	

Note₁: Open x Health = Interaction between Openness and Health; Consc x Health = Interaction between Conscientiousness and Health; Extra x Health = Interaction between Extraversion and Health; Neuro x Health = Interaction between Neuroticism and Health; Agree x Health = Interaction between Agreeableness and Health

Note₂: Health, Openness, Conscientiousness, Extraversion, Neuroticism, and Agreeableness were centered at their means.

Note₃: B = unstandardized coefficient; SE B = standard error for the unstandardized beta; β = standardized coefficient; sr^2 = semi-partial squared value

*$p < .05$

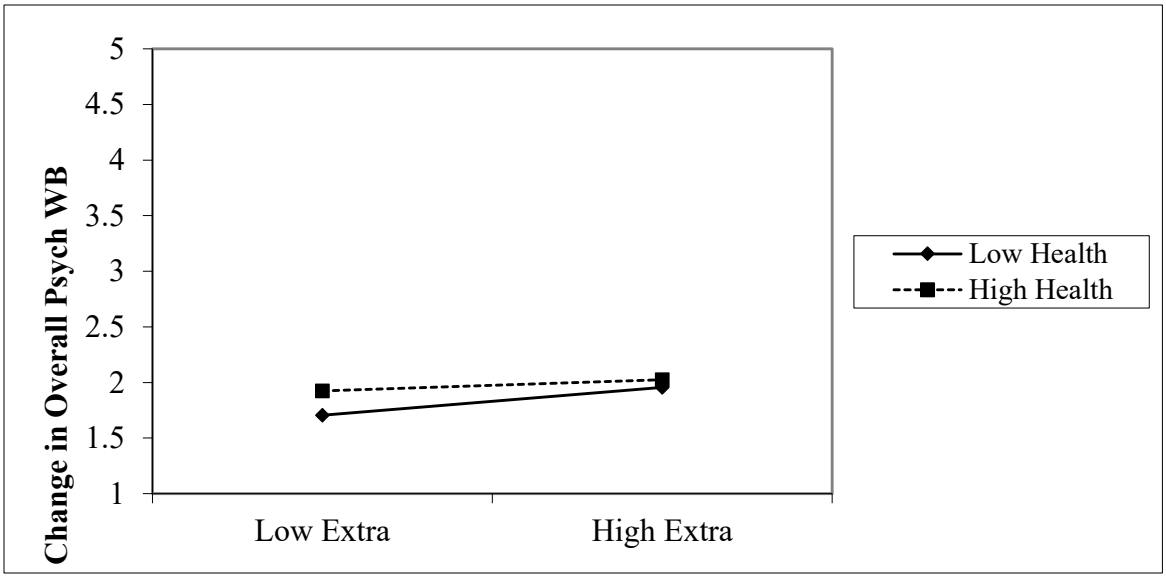

Figure 2. Interaction effect of Health on Extraversion and Change in Overall Psychological Well-Being

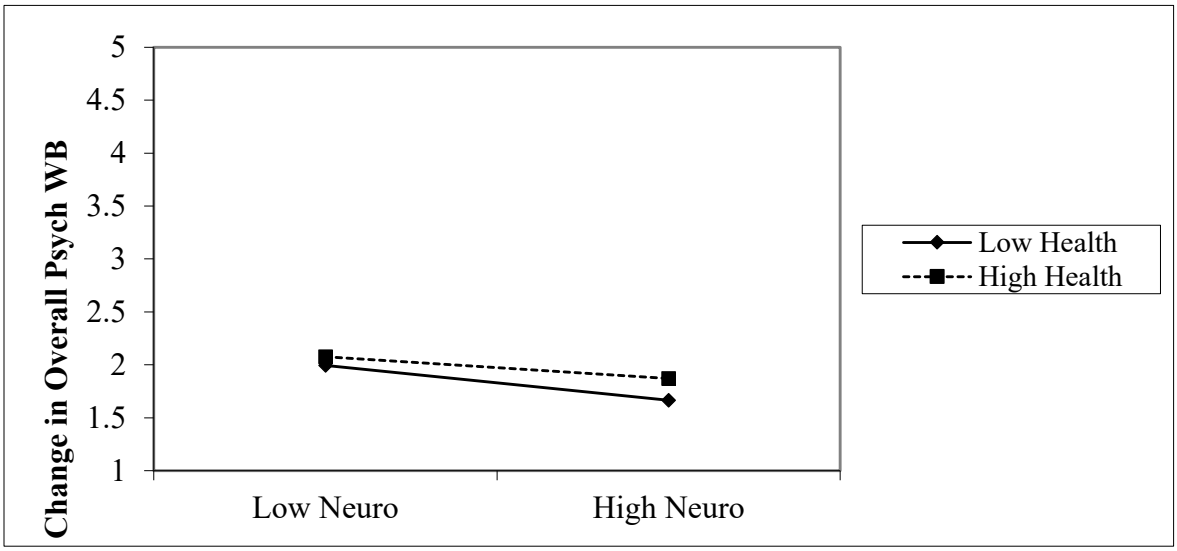

Figure 3. Interaction effect of Health on Neuroticism and Change in Overall Psychological Well-Being

Summary

A two-way mixed effects ANOVA was conducted to assess whether psychological well-being changed between 1993 and 2011, and whether gender impacted that change. Psychological well-being did not change over time, nor did gender influence change, however when ignoring the effect over time females were found to have higher levels of overall psychological well-being. Additionally, hierarchical multiple regression analyses were conducted to assess the predictive relationships of sexual frequency, sexual satisfaction, and personality traits on change in overall psychological well-being, and whether gender and health moderated these relationships. Statistical results identified predictive relationships among all variables. No moderation effects were found with health or gender with sexual frequency and sexual satisfaction. However, gender was found to moderate the relationship between neuroticism and change in overall psychological well-being, and health was found to moderate the relationships between extraversion and change in overall psychological well-being, as well as neuroticism and change in overall psychological well-being. Chapter 5 will interpret the study results, identify limitations, discuss recommendations for future research, and make inferences regarding implications for practice.

Chapter V: Discussion

Previous studies have utilized psychological well-being models to assess different aspects of successful aging in older adults (Maroof & Kahn, 2016; Friedman & Ryff, 2012; Hill & Turiano, 2014; Boyle et al., 2010; Han & Shibusawa, 2015; Homan, 2016; Lamers et al., 2015). Ryff (1989b) rooted the psychological well-being model in the ideas of several developmental theories, one of which was Erikson's (1968) theory of psychosocial development. Well-being theory, later founded by Martin Seligman (2011), seemed to be heavily rooted in Ryff's (1989b) model and uses many of the same structures founded by Ryff (1989b). The current study used Erikson's (1968) and Seligman's (2011) theories as a framework to identify if sexual behaviors or personality impact successful aging as individuals transition to old age. To the researcher's knowledge, no other studies have investigated how both sexual behaviors and personality traits impact psychological well-being in the aging process. Conceptual studies of the aging process have called for empirical research that provides additional insight into how successful aging can be promoted further (Ryff, 2008; Christensen et al., 2009), which the current study aimed to do.

The purpose of this quantitative study was to identify whether sexual behaviors and personality predicted successful aging, measured by the change in overall psychological well-being when participants were approximately between 53 and 71 years old. The researcher also analyzed gender and self-reported health status to see if they moderated the relationship. The current study's results provide support for the promotion of successful aging through increased sexual behavior and support for specified personality traits. Specifically, results suggest that increased sexual frequency, increased

sexual pleasure, and personality all predict change in overall psychological well-being across in the transition to older adulthood. Additionally, results indicated that gender may moderate the effect of neuroticism on change in overall psychological well-being, that health may moderate the effects of extraversion and neuroticism specifically on change in overall psychological well-being. Below are interpretations and conclusions regarding the results of the study. The final section includes specific limitations of the study, suggestions and recommendations for future research, implications for practice, and overall conclusions.

Research Question One: Change in Overall Psychological Well-Being

Results analyzing the first research question suggested that overall psychological well-being did not statistically differ as individuals transitioned into old age. These findings contrast with previous research as well as developmental theories which posit that maturation-based age-related changes impact psychological well-being in some way, whether positively or negatively (Friedman & Ryff, 2012; Gana et al., 2013; Maroof & Kahn, 2016; Springer et al., 2011). For example, Ryff (2008) believed that psychological well-being would improve as individuals age. Although the current findings suggest that no changes occur, they provide support that overall psychological well-being is maintained as individual transition to old age. As discussed earlier, significant psychosocial challenges arise when individuals enter their later years (Sutipan et al., 2017) which can make it challenging to maintain a sense of well-being. The current study suggests that individuals are remaining consistent in their psychological well-being in their older age, which may provide support that participants were able to maintain their level of psychological well-being in the transition to old age. Though the current study's

results showed that there is not an increase in well-being, participants seem to be able to manage the many unique challenges and changes that arise in a similar manner as their earlier years. This is consistent with previous research by Diener (2000) who suggested that individuals are able to adapt to large degree to good or bad conditions to maintain their well-being. This ability to maintain well-being provides some support for the ability of individuals to age successfully.

Additionally, this study's results indicated that gender does not impact overall psychological well-being across time. This finding was unexpected given that a robust amount of research has shown that there are notable differences between males and females across many different social, mental, and physical domains (González-Carrasco et al., 2017; Parker & Brotchie, 2010; Madden, 2010; Nguyen et al., 2015). However, when ignoring time, females generally had higher levels of overall psychological well-being than males. Previous studies have generally been inconclusive regarding gender differences in well-being; while some of them suggest that there are no differences between gender (Salleh & Mustaffa, 2016), others have asserted that gender differences do indeed exist (González-Carrasco et al., 2017; Li et al., 2015; Pinquart & Sörensen, 2001). Given that Ryff's (1989b) psychological well-being measure assesses well-being across diverse dimensions, the fact that females have rated themselves as having higher overall psychological well-being may be due to the dimensions being assessed. Studies have shown support that women have had lower levels of subjective well-being (Pinquart & Sörensen, 2001), however given that psychological well-being analyzes eudaimonic well-being, women may experience more meaning and self-realization in their lives than men. This is possibly due to the fact that women have been shown to have a larger social

network than men across the lifespan (Wrzus, Hänel, Wagner, & Neyer, 2012), possibly bolstering a sense of purpose in those that they connect with.

Educational Attainment, Net Worth, and Employment

In the current study, educational attainment, net worth, and employment were utilized as control variables. However, in some of the strongest models of the hierarchical regressions, they were also found to contribute to overall psychological well-being in the transition to old age. When assessing the predictive role of sexual behaviors, education and net worth were associated with higher psychological well-being, and when assessing the predictive nature of personality, having a higher level of education, possessing a higher level of net worth, and not being employed each also significantly contributed to overall psychological well-being in the transition to old age. Education has been linked with better health outcomes and also having positive impacts on social and mental functioning later in life (Kulhánová, Hoffmann, Judge, Looman, Eikemo, Bopp, ... & Wojtyniak, 2014; Kempen, Brilman, Ranchor, & Ormel, 1999). Additionally, research has shown that having a higher education is associated with an increased likelihood of utilizing preventative healthcare (Fletcher & Frisvold, 2009), which also likely contributes to more positive health outcomes in the aging process. Given that successful aging has been found to be rooted in high levels of functioning and in avoiding disease and disability (Rowe & Kahn, 1997), and that education has been shown to contribute to better health outcomes, it seems more likely that education be positively related with overall psychological well-being.

Additionally, studies have shown that higher income and socioeconomic status are associated with a better health-related quality of life in older age (Huguet, Kaplan, &

Feeny, 2008; Lordan, Soto, Brown, & Correa-Valez, 2012; Dalstra, Kunst, Mackenbach, & EU Working Group on Socioeconomic Inequalities in Health, 2006), while another study has found that lower socioeconomic status is associated with a higher risk for mental disability and psychiatric hospitalization (Hudson, 2005). This relationship may, in part, reflect the resources available to those individuals with higher incomes and/or net worth. Across the lifespan, those that have the privilege of a higher net worth are able to access preventative care, making it less likely that health issues arise in later life. Having a higher net worth becomes even more important for an individual as he or she transitions to old age, as, on average, the need for medical care services and associated expenses rise with age (World Health Organization, 2011). Thus, having the ability to confidently afford needed medical services, thereby avoiding additional stress and anxiety, likely contributes to psychological well-being in the transition to old age.

Employment has often been found to be highly influential in overall well-being, as research has shown links between the level of mentally demanding work and stimulation on subsequent cognitive health (Valenzuela & Sachdev, 2006). Additionally, studies have found that retirement without engagement in other social or volunteer work can negatively affect psychological, cognitive, and physical health, and can contribute to lower levels of well-being (Dave, Rashad, & Spasojevic, 2006). However, when the current study found employment to be significant, being unemployed was associated with higher levels of psychological well-being in the transition to older adulthood. This may be due to participants in the study finding activities post-retirement to fulfill their time and create purpose in their lives apart from their previous employment. In retirement, if planned accordingly, older adults can accomplish goals and seek different opportunities

that they may have not had access to due to their employment. Though previous research has indicated the challenges with retirement, it can also create a new opportunity for continued development in older adulthood.

The participant demographic information in the current study may also have contributed to this contrary finding. As stated previously, participants were all high school graduates from Wisconsin, and approximately 19 percent were of farm origin (Herd et al., 2014). While research that asserts the benefits of employment are generally rooted in having a mentally stimulating profession, a large percentage of participants in the current study were of farm origin. Accordingly, many participants' employment may have been more physically than mentally straining. With more physically demanding professions, it would not be surprising that participants exhibited higher levels of overall psychological well-being after becoming unemployed.

Research Question Two: Sexual Behaviors Predict Change in Overall Psychological Well-Being

The current study provided support for the hypotheses in that sexual behaviors were found to be predictive of overall psychological well-being in the transition to old age. Sexual frequency and sexual satisfaction were both statistically significant in their association with higher levels of psychological well-being. These finding provide support for previous studies which have indicated that there is a positive relationship between sexual behaviors and improved well-being (Syme, 2014; Wright & Jenks, 2016). While both sexual frequency and sexual satisfaction were statistically significant predictors of psychological well-being, the effect of sexual frequency was so small that it does not have a large amount of practical significance in its influence in psychological

well-being. Sexual satisfaction, however, was statistically significant and seem to have substantial practical significance in the change in overall psychological well-being between mid-life to older adulthood. The results suggest that in older adulthood, it is not the amount of sexual behavior that matters as much as the pleasure and gratification that is derived from the sexual act. This seems especially useful for older adults, who often have to change their sexual behaviors to work with their increasing age and disability (DeLamater & Karraker, 2009). Thus, interventions supporting sexual satisfaction over sexual frequency would seem most beneficial to promote successful aging.

While these results can only be considered preliminary, as additional studies are needed to further confirm the benefits of a satisfying sex life in the studied age range, they were consistent with previous research demonstrating the benefits of sex. Previous studies have identified that sexual satisfaction has had a direct influence in the quality of life of older adults (Chao et al., 2011). Results were consistent with these studies, and accordingly, may improve our understanding of how adults function as they transition to older adulthood. It is important to note, however, that the analyses were correlational, so while there is an implication that sexual satisfaction predicts psychological well-being in the transition to old age, it is also possible that psychological well-being leads to more pleasurable sexual experiences. Even with this understanding, the current study's preliminary results suggest that it may be beneficial to support older adults to address sexuality and sexual functioning. Studies have shown that with aging, individuals experience normal changes to their sexual functioning including challenges with respect to becoming aroused and experiencing fewer orgasms (DeLamater & Karraker, 2009). While an older person's rate of sexual frequency is likely to naturally decline, this

change may not be as important as other aspects of sexual behavior. Results suggest that elderly individuals' psychological well-being, and successful aging, may continue to be supported if individuals are deriving sexual pleasure and satisfaction from their sexual experiences. Interestingly, older adults may already implicitly understand this association, as Ginsburg et al. (2005) showed that older adults alter their sexual behaviors due to their increased age. Older adults can continue to enjoy themselves sexually, and reap the benefits in their psychological well-being, even though their sexual frequency may naturally decline. However, though significant, the effect of sexual satisfaction contributed to a small effect on overall psychological well-being in the transition to old age, indicating that many other factors may need to be analyzed as well to create a more comprehensive picture of the predictors of successful aging.

Research Question Three: Personality Predicts Change in Overall Psychological Well-Being

The current study found that personality was predictive of change in overall psychological well-being in the transition to old age after controlling for educational level, net worth, and employment status. This relationship was unsurprising, as personality has consistently been shown to be one of the strongest predictors of well-being (Keyes, 2002). Neuroticism and openness were negatively associated with overall psychological well-being, while conscientiousness, extraversion, and agreeableness were positively associated with greater psychological well-being. As noted previously, the results of the analyses were correlational, so it is also possible that psychological well-being leads to lower levels of neuroticism and openness, and higher levels of conscientiousness, extraversion, and agreeableness. In assessing openness specifically,

its association changed with overall psychological well-being, as it was positively related in the correlational analyses, and negatively related in the regression analysis. The inconsistent relationship to psychological well-being may be due to the degree of relatedness between the personality variables and their high degree of correlation. Due to the large amount of relatedness between the personality variables, it is possible that suppression is occurring. A suppression effect is possible when the extent with which variables are correlated influences the associations and statistics with the other variables that they are modeled with (Tzelgov & Henik, 1991). If the degree of relatedness between personality variables was not as high as it was, results would likely have shown a positive association with openness and well-being in the correlation analysis as well as in the regression analysis. However, if the personality variables did not influence the association with openness, and the significant negative association remained consistent, it is possible that this association was due to older adults reaching ego integrity and feeling balance and wisdom in their lives (Erikson, 1968). Acquiring this developmental task may, in part, be due to adults becoming more selective in their later years in the types of activities with which they engage, following the selective optimization with compensation model (SOC: Baltes & Baltes, 1990). In utilizing SOC, older adults improve their health and well-being by selecting and optimizing their most meaningful abilities and activities while concurrently compensating for declines and losses (Baltes & Baltes, 1990). In interacting with and optimizing fewer, yet more preferred activities, older adults are believed to find more fulfillment, and thus become grounded in ego integrity. SOC supports the current study's finding of a negative association between openness and overall psychological well-being in the transition to old age; openness

would decline in the process of selecting and optimizing more meaningful events, which, pursuant to the model, would promote successful aging.

Neuroticism was expected to be negatively related to psychological well-being, as previous research has indicated that neuroticism is significantly associated with lower life satisfaction and lower scores of well-being (Gale et al., 2013; Kahlbaugh & Huffman, 2017). Neuroticism indicates a tendency toward experiencing unpleasant emotions and emotional instability (McCrae & Costa, 1987), so it is unsurprising that in the transition to older adulthood, higher levels of emotional stability and pleasant emotions supported successful aging.

As stated previously, conscientiousness, extraversion, and agreeableness were all found to be positively related to psychological well-being in the transition to old age. While the positive relationships between extraversion and agreeableness with overall psychological well-being was expected, the latter's positive relationship with conscientiousness was not. Extraversion has been characterized by traits of a tendency to seek out interaction with others, sociability, and self-confidence, while agreeableness denotes that someone is caring, helpful, friendly, and compassionate toward others (McCrae & Costa, 1987). In previous studies, extraversion, specifically, was associated with positive affect and greater well-being (Gale et al., 2013; Steel et al., 2008). In the transition to older adulthood, social supports and interpersonal relationships are highly important, and based upon Seligman's (2011) theory, it is the cornerstone of well-being. Given that extraversion and agreeableness support positive relationships, these traits, specifically, seem important in psychological well-being in the transition to older adulthood. Conscientiousness, on the other hand, is associated with high levels of

organization and mindfulness to detail (McCrae & Costa, 1987). Steverink (2014) hypothesized that conscientiousness was negatively related to overall psychological well-being in old age due to frequent life-altering transitions and because, arguably, people experiencing so many significant changes in their lives may feel challenged gaining control or organization. However, perhaps this time period's frequent transitions perfectly explain why higher levels of conscientiousness are positively associated with psychological well-being. In the transition to old age, having the ability to provide structure and orderliness to a life that is in flux may prove to be a protective factor. Being responsible for oneself, industrious, and remaining in control of situations that may otherwise feel out of control may indeed support psychological well-being and overall successful aging.

Research Questions Four and Five: Moderated Effects of Gender and Health on the Relationship between Sexual Behaviors and Psychological Well-Being

Neither gender nor health were shown to moderate the relationships between sexual behaviors and overall psychological well-being in the transition to old age. As previous studies have indicated that gender and health are highly influential, these finding were unexpected. Indeed, previous studies have frequently identified the differences between sexual behaviors in males and females, including the benefits derived, how they chose to express themselves sexually, and the overall frequency of sexual activity (DeLamater, 2012; DeLamater & Karraker, 2009; Wright & Jenks, 2016). Thus, it would be expected that gender differences would affect the strength of the relationship between sexual behavior and overall psychological well-being. It may be possible that in the transition to older adulthood, perspectives, and the importance placed on sexual activity

may change. Pursuant to Erikson's (1968) model for psychosocial development, when individuals enter into the ego integrity vs despair stage, they begin to accept their lives as lived and to reflect on the accomplishments they have achieved, while also coming to terms with their impending mortality. In working through the challenges of this developmental task, it is possible that males and females begin to view sex in the same manner. As so many other transitions are occurring during this time, it may be that beliefs and feelings about sex become more similar in old age. Additionally, these similarities may also be due to physiological development as well, as both males and females experience physical decline in sexual function in the aging process (DeLamater & Karraker, 2009). Under this interpretation, gender would continue moderating sexual behaviors and psychological well-being in younger individuals, but its effect would increasingly disappear as people develop into old age.

Health, also, did not moderate sexual behaviors and overall psychological well-being in the transition to old age. This finding was even more unexpected than the lack of moderation with gender, as countless studies have shown the link between physical health and sexual behaviors, not only in regards to sexual frequency but also with respect to the ability to derive pleasure and satisfaction (DeLamater, 2012; Ginsberg et al., 2005; Merghati-Khoei et al., 2015). It seemed likely that health would impact the strength of association between sexual behavior and overall psychological well-being particularly during individuals' transition to old age, when they encounter increased rates of disease and disability. It may be possible that health did not moderate this relationship due to participants' perceptions about their health. Health scores were self-reported measures, making them highly rooted in the participants' own perceptions. Participants may have

felt that they were in good health, and accordingly did not believe it would interfere with other aspects of their lives, including their sex lives. Studies have shown that when people cognitively control their responses to stress or health challenges, they can improve their current circumstances; this phenomenon is colloquially known as "mind over matter" (Chalk, 2007; Jamieson, Nock, & Mendes, 2012). Participants may have adopted the "mind over matter" construct in regard to their health. In having more positive perceptions about their physical well-being, impacts on constructs such as psychological well-being may not be as apparent as research has previously indicated.

Additionally, as previously discussed, earlier studies have shown that older adults change their sexual behaviors to account for their ages and possible disabilities (DeLamater, 2012; Ginsberg et al., 2005). Seeking more creative means of sexual expression, older adults may find ways in which to experience sexual satisfaction that are particularly suited for lower levels of health or higher rates of disability. As the current study's result suggest that sexual frequency was not as important to overall psychological well-being in the transition to old age as sexual satisfaction, older adults may continue to find sexual pleasure and satisfaction even with health and disability challenges.

Research Question Six: Moderated Effects of Gender and Health on the Relationship between Personality and Psychological Well-Being

The current study analyzed whether gender or health moderated the relationship between personality and overall psychological well-being in the transition to older adulthood. Results indicated that gender statistically significantly moderated the relationship between neuroticism and change in overall psychological well-being, and health statistically significantly moderated the relationships between extraversion and

neuroticism with change in overall psychological well-being. While moderation effects were found, it is important to note that the interactions were so small that they likely do not have any practical significance. The analyses' sample sizes were very large; a study with a smaller sample of participants likely would not find any such significance. However, the significant moderation between gender and neuroticism was expected, as gender differences have been observed in personality studies, and have been consistent across cultures (Costa, Terracciano, & McCrae, 2001). In the moderation analysis, females were found to be more impacted by neuroticism than their male counterparts. Studies have consistently shown that females tend to have higher levels of neuroticism than males (Jylhä, & Isometsä, 2006; Parker & Brotchie, 2010; Wilson, Krueger, Gu, Bienias, de Leon, & Evans, 2005), so perhaps females' psychological well-being are also more impacted by their neurotic traits. In the transition to older adulthood, females' susceptibility to neuroticism would seem to be particularly important, as there are many challenges that arise which would make it likely to encounter feelings of instability and insecurity.

As indicated above, health only moderated certain personality traits, namely extraversion and neuroticism. Though the current study's results did not fully support its hypothesis that health would moderate the relationship between all personality traits and change in overall psychological well-being, there was a moderation effect in both extraversion and neuroticism, which was expected as health has been shown to play a pivotal role in the lives of older adults (Benyamini, Leventhal, & Leventhal, 2003). Results indicated that extraversion's positive effect on overall psychological well-being only existed for those in good health, and neuroticism's negative effect on overall

psychological well-being was stronger for those in poor health. These results suggest that extraversion is not as impactful in overall psychological well-being in those who are in poor health compared to those who are healthy. This finding seems to contradict previous research on personality which indicated that higher levels of extraversion were associated with greater well-being without limitation (Gale et al., 2013; Steel et al., 2008). However, results also seem to support previous research on health and psychological well-being which indicated that health was highly important in older adults' well-being (Friedman & Ryff, 2012; Han & Shibusawa, 2015; Hill & Turino, 2014; Ryff, 2014). Based upon the results of the current study, it seems that even though extraversion was predictive of overall psychological well-being, health may be a more important construct to consider in the transition to older adulthood.

On the other hand, neuroticism was found to be stronger in those who were in poor health. These results were expected, as previous research has indicated that lower levels of health (Friedman & Ryff, 2012; Han & Shibusawa, 2015; Hill & Turino, 2014; Ryff, 2014) and higher levels of neuroticism (Gale et al., 2013; Kahlbaugh & Huffman, 2017; Steel et al., 2008) negatively influence well-being. It would thus seem reasonable to conclude that neuroticism is more influential in psychological well-being in those with poorer perceptions of health status. With understanding this relationship between health and personality traits, as adults transition to older adulthood, it is not only important to address their health, but also to be aware of their individual characteristics and mood, and how these factors may also play a significant role in the aging process.

Limitations

This study highlights the contributions that sexual behaviors and personality traits have in the transition to older adulthood, and their impact in successful aging. While the current study's results offer insights about the relationships among sexual behaviors and personality in the aging process, several limiting factors were present. Many issues were associated with practical difficulties of using data from a large sample that was collected over an extensive period of time. Additionally, some limitations were related to the comprehensiveness of the dissertation research itself.

Practical Limitations

Many of the limitations impacting this study were rooted in external factors related to the restrictions set by the University of Wisconsin Survey Center, which handles and collects the data for the WLS. The University of Wisconsin Survey Center made decisions about the assessments used and how survey items were assessed both within and across the waves of the study. Additionally, while the span of observation time for a longitudinal study is a strength of the current study and critical in assessing the aging process, there are some disadvantages to the collected data including measurement error and attrition rate of participants.

Measurement error. In longitudinal repeated measures, surveys are subject to error. Between the different time periods when data were collected, surveys were not completely replicated. This discrepancy between surveys analyzing the same constructs would make it possible to obtain measures that suggest change when in fact no change existed at all. The specific scale which was not consistent across time was the scale assessing psychological well-being based upon Ryff's (1989b) scale. While the scales

provided were representative of the same dimensions of psychological well-being, they were not identical in their approach. Given that the current study analyzed participants across time, the inconsistent instrumentation may not have provided completely comparable results.

Additionally, the questions asked of participants about their sexual lives were limited in the presented structure. Skip logic was utilized, and participants had to have a sexual partner, and either be married and/or live with someone. If participants were not married, or did not live with someone, they were instructed to skip the question about their sexual activity. The way in which the survey was structured negates a lot of sexual activity, which if included would likely have influenced the results of the current study.

Multicollinearity. Although the VIF across all regression models ranged between 1.0 and 4.09, which was less than Cohen et al.'s critical value of 10 (2003), it seems as though the correlations between personality variables may have been problematic in the current study. Results of the personality regression indicated some erratic changes in the relationship between the predictors and dependent variable, especially in regard to the personality variable of openness. Menard (1995) suggested that VIFs as small as 2.0 can result in problems with estimation, and as such, the results regarding the correlated personality variables may have been limited.

Attrition. The WLS began in 1957, and continues the data collection process today. Accordingly, the survey experienced participant attrition for various reasons including challenges maintaining contact, sustaining motivation, and death. The participant dropout rate can make it challenging to state precisely the compatibility of the results between 1993 and 2011. Additionally, measuring change may be confounded due

to those participants who did not respond in 2011, as those who did not participate may differ in some systemic way from those who did. However, WLS interviewers successfully surveyed large proportions of the then-surviving members of the original 1957 sample in 1993 and 2011, 87.31% and 72.16% respectively (Herd et al., 2014). Thus, the loss of participants was not disproportionate from those who were retained.

Self-report surveys. The measures used to assess psychological well-being, personality traits, sexual behavior, and health status were all derived from self-report data. As such, it is possible that participants altered their responses toward more socially desirable responses. This tendency seems especially likely with respect to questions regarding sexual behaviors. Previous research has identified that social context and cultural bias regarding female sexuality can influence the accuracy of self-reported sexual behavior (Schroder, Carey, & Vanable, 2003). This bias is likely compounded by the ageist perspective that elderly individuals do not, or should not, have sex (Mahieu & Gastmans, 2012). It is thus possible that participants do not identify themselves accurately when responding about their sex lives.

Similar concerns exist regarding self-reported health status, which can differ significantly from medical records and current diagnoses for many reasons including poor patient-clinician communication, self-diagnosis in the absence of satisfactory medical treatment, health literacy of the person, and general acceptance of health status as one ages (Dewey & Parker, 2000; Short, Goetzel, Pei, Tabrizi, Ozminkowski, Gibson, ... & Wilson, 2009; Smith, Chu, Smith, Amoroso, Boyko, Hooper, ... & Ryan,

2008). The use of additional proxy information regarding health status could potentially yield a more accurate assessment of health status.

Missing data. This study was heavily impacted by the need for listwise deletion, which was utilized to ensure that all participants were answering the same amount items and information regarding items within domains (i.e., psychological well-being and personality surveys). While the sample size was still large enough to yield adequate power for the analyses conducted, the amount that needed to be extracted was a limiting aspect of the study.

Participant sample. The WLS sample is broadly representative of White, non-Hispanic American men and women who had completed at least a high school education in 1957. They identified their ancestry as mainly of German, English, Irish, Scandinavian, Polish, or Czech descent (Herd et al., 2014), and, as such, minorities are not well-represented; the sample only includes a handful of African American, Hispanic, or Asian persons (Herd et al., 2014). This lack of minority representation reflected Wisconsin's general population in 1957, and certainly limits the generalizability of the study's findings. Along with a lack of minority representation, all participants had a least a high school education and they all completed their degree in Wisconsin, which again limits the amount of generalizability possible. Additionally, no information for the participants was analyzed regarding their sexual orientation, which may have also been highly influential of the current results. Also, a cohort effect may be taking place with the participants as they are part of the baby-boomer population. It may be difficult to generalize findings to a different age cohort from another time. Future analyses with a

broader range of participant background would likely strengthen the findings and maximize the generalizability to the whole population.

Study Comprehensiveness

It is highly unlikely that any research regarding psychological well-being would be able to control for the vast array of factors that impact overall psychological well-being. As such, control variables were limited to education level, net worth, and employment status. As a result of limiting the study to the above controls, it is uncertain how the results of the study may have been impacted by other potentially significant factors outside of the chosen control variables selected. Future research identifying a broader range of control factors may help to strengthen the results of the study.

Additionally, the current stud utilized overall psychological well-being based upon Ryff's (1989b) scale instead of analyzing the individual dimensions that make up psychological well-being. In analyzing the total well-being model, the current study faces a bandwidth-fidelity dilemma, meaning that a dilemma exists from the trade-off between using measures that cover the majority of variation rather than assessing specific dimensions more precisely (Cronbach & Gleser, 1965). In assessing psychological well-being as a whole, the current study was able to identify broader prediction over the entire range of dimensions. However, in analyzing psychological well-being as a whole, measures of how specific dimensions are influenced by the predictive factors may be difficult to identify.

Recommendations for Future Research

Though the present study found significant results, findings should be considered preliminary as further research investigating the role of sexual behaviors and personality

with the older population is necessary. Thus, a range of recommendations naturally arises to promote an understanding of this transitionary period. The majority of these recommendations are intended to strengthen the current study in several ways including enhancing the research design, data collection, and analysis.

First, future studies would benefit from developing a more comprehensive understanding of the indirect effects of sexual behaviors in the elderly population. Sexual behaviors, in general, are highly understudied in the older adult population. This investigation was successful in its endeavors to identify some preliminary findings in regard to the impacts of sexual behaviors on overall psychological well-being. Analyzing older adults' sexual behaviors and sexuality in a more positive light may yield further indirect findings of the benefits of a healthy sex life in other mental health domains. With the links between social, biological, and physiological aging so well-documented (Stuart-Hamilton, 2006), further understanding the benefits of sexual behaviors in older adults may enable a researcher to identify more indirect effects in other life domains.

Additionally, the current study focuses on the impacts of overall psychological well-being, which is a diverse and comprehensive model. It is important for future studies to consider further psychosocial factors that may influence the psychological well-being of older adults. For example, identifying models with other transitionary aspects of aging such as social supports, relocation, bereavement, and volunteerism may yield a more comprehensive model. Developmental theories view this transitional period into older adulthood as a time of reflection and shifting of roles from earlier years (Erikson, 1968; Cumming & Henry, 1961). There are several factors that may help

provide a more well-rounded understanding of how psychological well-being is influenced in these later years of life, and further research would likely benefit from continuing to analyze more nuanced factors in addition to sexual behaviors and personality traits.

The current study utilizes a psychological well-being model created by Ryff (1989b) which identifies six dimensions comprising an individual's overall psychological well-being: purpose in life, autonomy, personal growth, environmental mastery, positive relationships with others, and self-acceptance. For the purposes for the current study, these dimensions were condensed and averaged to analyze the overall psychological well-being of participants, and how the total changed over time and was influenced by the predictive factors. Given that results were significant, and overall psychological well-being was influenced by sexual behaviors and personality traits, future research would likely benefit from analyzing the psychological well-being dimensions individually. Understanding how the individual dimensions are influenced, or not influenced, would provide both a more nuanced and comprehensive view of how individuals are affected during this transitionary period. Additionally, it would assist in the current bandwidth-fidelity dilemma that the current study faces. For example, an adult's autonomy is likely more impacted during the transition to older adulthood than in other transitory periods in life. Also, investigating how sexual behaviors or personality influence autonomy, specifically, may yield information regarding older adults' self-determination and independence.

Additionally, while the current study analyzed data using SPSS version 24 (IBM Corp., 2016) – which was beneficial in identifying predictive relationships among the

variables – future studies may benefit from analyzing the same variables applying structural equation modeling (SEM). SEM is a technique of data analysis that is used for specifying and estimating models of linear relationships among variables (MacCallum & Austin, 2000). Path analysis, specifically, is a component of SEM that provides for the testing of models of relationships while accounting for errors in measurement among observed variables (MacCallum & Austin, 2000). This ability to analyze models have often deemed SEM to be a preferred and stronger analytical method of examining potential causal pathways than multiple regressions because of this ability to consider and account for measurement errors. Thus, future studies utilizing a path analysis would likely yield results that are more powerful than the current study.

In addressing some of the noted limitations of the current study, there were challenges in consistency of measures across the waves of the WLS. While this inconsistency in measures is common in longitudinal studies, future studies would benefit from identifying longitudinal data which remained consistent in their measures across time. A further limitation of the current study was the lack of demographic variation among participants. Specifically, they all were from the same state of Wisconsin and generally had the same cultural background (Herd et al., 2014). In order to provide more generalizable results, future research should attempt to replicate the current study with a more culturally diverse group of participants.

While the current study analyzed how sexual behaviors and personality traits impact overall psychological well-being in the transition to old age, it did not examine how personality may affect the sexual behaviors of older adults during this transitionary period. Given that both sexual behaviors and personality were found to influence

psychological well-being, it may be beneficial to further examine the relationships between these constructs by assessing how personality impacts sexual behaviors. It is likely that personality has a significant role in the sexual behavior of older adults, and better understanding this association may provide a better grasp of how these constructs work to influence well-being.

Lastly, assessing elderly individuals' sexual behaviors is a sensitive and possibly stigmatizing subject, as the portrayal of their sexual behaviors is often rooted in negativistic and ageist perspectives (Taylor & Gosney, 2011; Wylie et al., 2013). Future research in assessing the effects of sexual behaviors on the psychological well-being of the elderly would likely benefit from a qualitative approach, because it may create a safer and open environment for participants to share their experiences. Though asking participants questions in-person may lead them to withhold information, this approach may also create an easier environment to express themselves. Given that the current study provides some quantitative insights into the effects of sexual behaviors, qualitative analysis may further explain and provide greater depth and detail about the sexual behaviors of older adults. Additionally, a qualitative analysis can provide a detailed and individualized view of older adults' own understandings and perspectives on the subject, and may provide richer data from which to draw upon.

Implications for Practice

The current study offers important information with respect to the aging process. Specifically, it provides insight into the promotion of successful aging through a better understanding of salient factors that subsist in the aging process. The positive impact of sexual behaviors as well as a better understanding of the impact of personality traits

during the aging process can help inform counselors on how to best support their clients and promote more transparent dialogue about the challenges that may arise during this time. Older adults' sex lives are generally not discussed across helping professions, and it is important to consider how to discuss this important aspect of life with those transitioning to older age. Counselors can affirm elderly individuals' natural inclination to continue engaging in healthy sexual activities, and can create a safe space for clients to speak openly and honestly about a topic that has often been a highly stigmatized topic in their community. Sexuality is a developmental process, and accordingly it is essential for modern counselors to become more informed about sexuality across the lifespan. In a culture that seeks the promotion of well-being in older adults, sexuality and sexual satisfaction should be discussed.

The American Counseling Association's (ACA) Code of Ethics (2014) asserts that one of the counseling profession's core values is "honoring diversity and embracing a multicultural approach in support of the worth, dignity, potential, and uniqueness of people within their social and cultural contexts" (p. 3), and highlights the importance of appropriate training and competence of counselors working with special populations. While many counselors understand the importance of practicing multicultural counseling to effectively address the needs of clients, it may not be understood that cultures also vary across age ranges. Being aware of and competent in addressing the challenges and roles that older adults find thrust upon themselves is paramount when working with this population. In order for counselors to meet their ethical obligations under the ACA's Code of Ethics (2014), they must continue to engage in ongoing professional development regarding current topics associated with the aging

population, including sexual behaviors and personality. In ensuring that counselors are informed and competent about the culture of older adults, they can employ information about the challenges and benefits associated with sexuality in the transition to older adulthood, and in turn can support their clients' desires to continue engaging in an active and satisfying sex life into their later years. However, being aware of the challenges that clients may encounter in discussing sexuality is also important in the role of being multiculturally competent so as to be mindful that as a counselor you are avoiding any possible harm to your client (ACA, 2014).

The current study's results also underscore the importance personality plays in individuals' transition to older adulthood and how traits can positively or negatively influence psychological well-being. Findings indicated that neuroticism decreases psychological well-being, especially among female participants transitioning to old age. Counselors highlighting the promotion of emotional stability within the counseling setting as clients are transitioning to older adulthood may assist with decreasing neurotic tendencies and facilitate the development of more positive characteristics. In promoting more positive behaviors, counselors may not only assist with overall psychological well-being, but also may provide clients with more protective factors against challenges with physical health and disability.

Additionally, outside of the counseling setting, it is important for counselors to be aware of the other diverse types of professionals who work with older adults to provide them with the best care possible. Counselors should become knowledgeable of the different services with which clients are connected, and the specialists with whom they may be working. In building networks of professionals outside of the counseling

profession, counselors can help connect clients with other specialized services and coordinate clinical care. With a more comprehensive professional network, a counselor may be able to enhance services for older clients and promote aspects known to enhance well-being, including sexual behaviors and personality characteristics, outside of the counseling setting.

Lastly, the Council for Accreditation of Counseling and Related Educational Programs (CACREP) highlights standards for training new counselors which include the impact of disability on sexual functioning as well as the impact of human sexuality in couple and family functioning (2016). Although CACREP mandates training on sexuality, it is unclear as to what training counselors are receiving and how issues of sexuality are being addressed in the clinical setting. In a study analyzing counselors' attitudes, knowledge, and behaviors regarding sexuality, Russell (2012) found that counselors' attitudes about sexual health, and not necessarily their level of knowledge, predicted whether sexuality was addressed with clients. As such, promoting a safe and open forum for new counselors to share their perceptions and feelings about sexuality in a clinical setting also seems important. With more training of counselors in sexuality and addressing sexual matters in a clinical setting, counselors can feel more empowered to address such issues and support older adults in their emotional health as they enter into one of the final phases of their lives.

Summary and Conclusions

The current study demonstrated that sexual behaviors and personality traits could promote successful aging in individuals transitioning into older adulthood. These results are consistent with previous research that highlights the importance of both healthy

sexual behaviors on well-being (Onder et al., 2003; Grewen & Light, 2011) and research asserting the link between successful aging and personality traits (Kahlbaugh & Huffman, 2017). Though these findings can only be deemed as preliminary, significant relationships were found between increased sexual frequency, increased levels of sexual satisfaction, and personality predicting overall psychological well-being in the transition to older adulthood. Additionally, gender was found to moderate the relationship between neuroticism and psychological well-being, and health was found to moderate the relationships between all personality traits and psychological well-being. Although statistically significant findings were shown, increased sexual satisfaction and the lower levels of the personality trait of neuroticism seem to have the only practical significance in the prediction of psychological well-being in the transition to older adulthood. The influence of sexuality and personality should continue to be explored in older adults, particularly in individuals from more diverse backgrounds and racial or ethnic minorities, and in relation to other possible mediating or moderating factors that influence the aging process such as support systems or religious beliefs.

The current study had many strengths and limitations. It made use of a large sample that included comprehensive data on diverse dimensions (Herd et al., 2014), and analyzed information across time points. Additionally, varied statistical analyses were employed to investigate the changes between time points, how much variation each dependent variable explained, and possible moderating effects of gender and health. Research was limited by measurement error, a high proportion of missing data, attrition, and self-reported data.

Overall, the current study's findings suggest that older clients would benefit from additional attention paid to their sexual health needs. The researcher recommends training counselors to become more aware of such cultural implications of working with older populations. The current study makes several recommendations for future research to support and bolster its findings that older adults can continue to engage in sexual activities and that these activities can contribute to their successful aging. More broadly, the researcher advocates for further study of the aging process, which may establish additional insights into possible protective factors for the older population. Future research tailored to the current study's recommendations may enable counselors to further provide older clientele with culturally competent and knowledgeable treatment and intervention particularly attuned to their diverse treatment needs. Too often, older adults and the counselors serving them believe that they have limited capacity to improve their psychological well-being, or are too highly focused on more apparent aspects of aging (i.e. physical health/disability). Taking this type of limited approach is wrong and antithetical to their progress and development. Counselors can more effectively treat individuals transitioning to older adulthood by continuing to expand their understanding of this population. Older adults have the right to strive for happiness, and engaging in sexual behaviors is one way in which they can continue thrive. Accordingly, older adults deserve the time and attention to address any factors – even those that may not immediately seem obvious – which can effectively promote their well-being. Growing older is an inevitable aspect of life, and it should not only be associated with decline. Older adults and their counselors should celebrate a continued ability to prosper and find fulfillment in diverse aspects of life, including their sex life.

References

Adler, A., Unanue, W., Osin, E., Ricard, M., Alkire, S. & Seligman, M. (2017). Psychological well-being. In *Happiness: Transforming the development landscape* (118-155). Thimphu, Bhutan.

Administration on Aging. (2015). A Profile of Older Americans: 2015. Washington, DC: U.S. Department of Health and Human Services.

Aiken L.S., West SG. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park: Sage.

Akincigil, A., Olfson, M., Walkup, J. T., Siegel, M. J., Kalay, E., Amin, S., ... & Crystal, S. (2011). Diagnosis and treatment of depression in older community-dwelling adults: 1992–2005. *Journal of the American Geriatrics Society*, *59*(6), 1042-1051.

Aldwin, C. M., & Igarashi, H. (2015). Successful, optimal, and resilient aging: A psychosocial perspective. In. P. A. Lichtenberg, B. T. Mast, B. D. Carpenter, & J. L. Wetherell, (Eds.), *APA handbook of clinical geropsychology* (Vol. 1, 331-360). Washington, DC: American Psychological Association.

American Association of Retired Persons. (2010). *Sex, romance, and relationships: AARP survey of midlife and older adults* (Pub. No. D19234). Washington, DC: Author.

American Counseling Association. (2014). ACA Code of Ethics. Alexandria, VA: Author.

Anderson, L. A., Goodman, R. A., Holtzman, D., Posner, S. F., & Northridge, M. E. (2012). Aging in the United States: Opportunities and challenges for public health. *American Journal of Public Health, 102*(3), 393-395.

Antonakis, J., & Dietz, J. (2011). Looking for validity or testing it? The perils of stepwise regression, extreme-score analysis, heteroscedasticity, and measurement error. *Personality and Individual Differences, 50*, 409-415. doi:10.1016/j.paid.2010.09.014

Aristotle. (1925). *The nicomachean ethics*. New York: Oxford University Press.

Arterberry, B. J., Martens, M. P., Cadigan, J. M., & Rohrer, D. (2014). Application of generalizability theory to the big five inventory. *Personality and individual differences*, *69*, 98-103.

Ahlskog, J. E., Geda, Y. E., Graff-Radford, N. R., & Petersen, R. C. (2011). Physical exercise as a preventive or disease-modifying treatment of dementia and brain aging. *Mayo Clinic Proceedings, 86*(9), 876-884. doi:10.4065/mcp.2011.0252

Austad, S. N. (2006). Why women live longer than men: Sex differences in longevity. *Gender Medicine, 3*(2), 79-92.

Bach, L., Mortimer, J., VandeWeerd, C., & Corvin, J. (2013). The association of physical and mental health with sexual activity in older adults in a retirement community. *Journal of Sexual Medicine, 10*(11), 2671-2678. doi:10.1111/jsm.12308

Baker, T. A. (2014). The importance of aging studies: Understanding the influence of diversity and culture. *Age Culture Humanities: An Interdisciplinary Journal, 1*, 39-41.

Baltes, P. B., & Baltes, M. M. (1990). Psychological perspectives on successful aging: The model of selective optimization with compensation. In P. B. Baltes & M. M.

Baltes (Eds.), *Successful aging: Perspectives from the behavioral sciences* (pp. 1–34). New York: Cambridge University Press.

Baltes, P. B., & Baltes, M. M. (Eds.). (1993). *Successful aging: Perspectives from the behavioral sciences* (Vol. 4). Cambridge University Press.

Baltes, P. B., & Smith, J. (2003). New frontiers in the future of aging: From successful aging of the young old to the dilemmas of the fourth age. *Gerontology*, *49*(2), 123-135.

Barnes, S. F. (2007). Baby boomers: Just another generation? *Institute for Applied Critical Thinking*, 1-2.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51* (6), 1173–1182.

Becker, J. B., McClellan, M. L., & Reed, B. G. (2017). Sex differences, gender and addiction. *Journal of Neuroscience Research, 95*(1-2), 136-147. doi:10.1002/jnr.23963

Blanchflower, D. G., & Oswald, A. J. (2008). Is well-being U-shaped over the life cycle? *Social Science & Medicine, 66*, 1733-1749.

Bleidorn, W., Kandler, C., Riemann, R., Angleitner, A., & Spinath, F. M. (2009). Patterns and sources of adult personality development: Growth curve analyses of the NEO PI-R scales in a longitudinal twin study. *Journal of Personality and Social Psychology, 97*, 142–155. doi: 10.1037/a0015434

Bodner, E. (2009). On the origins of ageism among older and younger adults. *International Psychogeriatrics*, *21*(6), 1003-1014.

Bookwala, J., Marshall, K. I., & Manning, S. W. (2014). Who needs a friend? Marital status transitions and physical health outcomes in later life. *Health Psychology*, *33*(6), 505-515.

Boyle, P. A., Buchman, A. S., Barnes, L. L., & Bennett, D. A. (2010). Effect of a purpose in life on risk of incident Alzheimer disease and mild cognitive impairment in community-dwelling older persons. *Archives of general psychiatry*, *67*(3), 304-310.

Brooks, J. T., Buchacz, K., Gebo, K. A., & Mermin, J. (2012). HIV infection and older Americans: The public health perspective. *American journal of public health*, *102*(8), 1516-1526.

Brown, C., & Lowis, M. J. (2003). Psychosocial development in the elderly: An investigation into Erikson's ninth stage. *Journal of Aging Studies, 17*(4), 415-426.

Buhler, C. (1935). The curve of life as studied in biographies. *Journal of Applied Psychology, 19*, 405–409.

Burns, R. A., & Machin, M. A. (2009). Investigating the structural validity of Ryff's psychological well-being scales across two samples. *Social Indicators Research, 93*(2), 359-375. doi:10.1007/s11205-008-9329-1

Butkovic, A., Brkovic, I., & Bratko, D. (2012). Predicting well-being from personality in adolescents and older adults. *Journal of Happiness Studies, 13*(3), 455-467. doi:10.1007/s10902-011-9273-7

Cavanaugh, J., & Blanchard-Fields, F. (2015). *Adult development and aging*. Stamford, CT: Cenage Learning.

Centers for Disease Control and Prevention. (2009). Promoting preventive services for adults 50-64: *Community and Clinical Partnerships*. Atlanta, GA.

Chalk, H. M. (2007). Mind over matter: cognitive–behavioral determinants of emotional distress in multiple sclerosis patients. *Psychology, Health and Medicine*, *12*(5), 556-566.

Chao, J., Lin, Y., Ma, M., Lai, C., Ku, Y., Kuo, W., & Chao, I. (2011). Relationship among sexual desire, sexual satisfaction, and quality of life in middle-aged and older adults. *Journal of Sex & Marital Therapy, 37*(5), 386-403. doi:10.1080/0092623X.2011.607051

Chatterji, S., Byles, J., Cutler, D., Seeman, T., & Verdes, E. (2015). Health, functioning, and disability in older adults—present status and future implications. *The Lancet*, *385*(9967), 563-575.

Cheng, S. T., Chow, P. K., Song, Y. Q., Edwin, C. S., Chan, A. C., Lee, T. M., & Lam, J. H. (2014). Mental and physical activities delay cognitive decline in older persons with dementia. *The American Journal of Geriatric Psychiatry*, *22*(1), 63-74.

Cho, J., Martin, P., Poon, L. W., & Georgia Centenarian Study. (2015). Successful aging and subjective well-being among oldest-old adults. *The Gerontologist, 55*(1), 132-143. doi:10.1093/geront/gnu074

Christensen, K., Doblhammer, G., Rau, R., & Vaupel, J. W. (2009). Ageing populations: The challenges ahead. *The Lancet*, *374*(9696), 1196-1208.

Cohen, J. (1988), *Statistical Power Analysis for the Behavioral Sciences, 2nd Edition.* Hillsdale, N.J.: Lawrence Erlbaum.

Cohen, J. (1992). Statistical power analysis. *Current Directions in Psychological Science*, *1*(3), 98-101.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). Applied multiple regression/correlation analysis in the behavioral sciences (3rd ed.). Mahwah, NJ: Erlbaum.

Collins, A. L., Goldman, N., & Rodríguez, G. (2008). Is positive well-being protective of mobility limitations among older adults? *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *63*(6), P321-P327.

Costa, P. T., Jr., & McCrae, R. R. (1995). Domains and facets: Hierarchical personality assessment using the Revised NEO Personality Inventory. *Journal of Personality Assessment, 64*, 21–50. doi:10.1207/s15327752jpa6401_2

Costa, P. T., Terracciano, A., & McCrae, R. R. (2001). Gender differences in personality traits across cultures: Robust and surprising findings. *Journal of Personality and Social Psychology, 81*, 322–331.

Council for Accreditation of Counseling and Related Educational Programs. (2016). *2016 standards*.

Crimmins, E. M., & Vasunilashorn, S. M. (2015). Biodemography: Adding biological insight into social, economic, and psychological models of population and individual health change with age. In L. George, & K. Ferraro, (Eds.), *Handbook of aging and the social sciences* (8th ed., 56-72). Academic Press.

Cronbach, L. J., & Gleser, G. C. (1965). Psychological tests and personnel decisions. Oxford, England: U. Illinois Press.

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. Sage.

Cumming, E., & Henry, W. E. (1961). Crowing old. New York: Basic Books.

Dalstra, J. A. A., Kunst, A. E., Mackenbach, J. P., & EU Working Group on Socioeconomic Inequalities in Health. (2006). A comparative appraisal of the relationship of education, income and housing tenure with less than good health among the elderly in Europe. *Social science & medicine*, *62*(8), 2046-2060.

Dave, D., Rashad, I., & Spasojevic, J. (2006). *The effects of retirement on physical and mental health outcomes* (No. w12123). National Bureau of Economic Research.

Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American psychologist*, *55*(1), 34-43.

de Medeiros, K. (2009). Suffering and generativity: Repairing threats to self in old age. *Journal of aging studies*, *23*(2), 97-102.

DeLamater, J. (2012). Sexual expression in later life: A review and synthesis. *Journal of Sex Research, 49*(2-3), 125-141. doi:10.1080/00224499.2011.603168

DeLamater, J., & Karraker, A. (2009). Sexual functioning in older adults. *Current Psychiatry Reports, 11*(1), 6-11. doi:10.1007/s11920-009-0002-4

DeLamater, J., & Moorman, S. M. (2007). Sexual behavior in later life. *Journal of Aging and Health*, *19*(6), 921-945.

Dewey, M. E., & Parker, C. J. (2000). Survey into health problems of elderly people: a comparison of self-report with proxy information. *International Journal of Epidemiology*, *29*(4), 684-697.

Diehr, P. H., Thielke, S. M., Newman, A. B., Hirsch, C., & Tracy, R. (2013). Decline in health for older adults: Five-year change in 13 key measures of standardized health. *Journals of Gerontology Series A: Biomedical Sciences and Medical Sciences*, *68*(9), 1059-1067.

Erikson, E. (1959). Identity and the life cycle. *Psychological Issues, 1*, 18–164.

Erikson, E. H. (1963). *Childhood and society*. New York: Norton.

Erikson, E. H. (1968). *Identity: Youth and crisis*. New York: Norton.

Erikson, E. H. (1993). *The life cycle completed*. New York: W.W. Norton.

Erlangsen, A., Stenager, E., & Conwell, Y. (2015). Physical diseases as predictors of suicide in older adults: A nationwide, register-based cohort study. *Social Psychiatry and Psychiatric Epidemiology*, *50*(9), 1427-1439.

Eskes, T., & Haanen, C. (2007). Why do women live longer than men? *European Journal of Obstetrics and Gynecology, 133*(2), 126-133. doi:10.1016/j.ejogrb.2007.01.006

Espinosa-Hernandez, G., & Vasilenko, S. (2015). Patterns of relationship and sexual behaviors in Mexican adolescents and associations with well-being: A latent class approach. *Journal of Adolescence, 44*, 280-290. doi:10.1016/j.adolescence.2015.08.011

Fang, R., Landis, B., Zhang, Z., Anderson, M. H., Shaw, J. D., & Kilduff, M. (2015). Integrating personality and social networks: A meta-analysis of personality, network position, and work outcomes in organizations. *Organization Science, 26*(4), 1243-1260. doi:10.1287/orsc.2015.0972

Ferguson, C. J. (2010). A meta-analysis of normal and disordered personality across the life span. *Journal of Personality and Social Psychology, 98*(4), 659–667.

Fiori, K. L., & Jager, J. (2012). The impact of social support networks on mental and physical health in the transition to older adulthood: A longitudinal, pattern-centered approach. *International Journal of Behavioral Development*, *36*(2), 117-129.

Fletcher, J. M., & Frisvold, D. E. (2009). Higher education and health investments: does more schooling affect preventive health care use? *Journal of Human Capital*, *3*(2), 144-176.

Fontana, L., Kennedy, B. K., Longo, V. D., Seals, D., & Melov, S. (2014). Medical research: treat ageing. *Nature*, *511*(7510), 405-407.

Frazier, P. A., Tix, A. P., & Barron, K. E. (2004). Testing moderator and mediator effects in counseling psychology research. *Journal of Counseling Psychology*, *51*(1), 115-134.

Friedman, E. M., & Ryff, C. D. (2012). Living well with medical comorbidities: A biopsychosocial perspective. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences, 67*(5), 535-544.

Funder, D. C. (2013). *The Personality Puzzle* (6th ed.). New York, NY: Norton.

Gale, C. R., Booth, T., Mõttus, R., Kuh, D., & Deary, I. J. (2013). Neuroticism and extraversion in youth predict mental wellbeing and life satisfaction 40 years later. *Journal of Research in Personality, 47*(6), 687-697. doi:10.1016/j.jrp.2013.06.005

Gana, K., Bailly, N., Saada, Y., Joulain, M., & Alaphilippe, D. (2013). Does life satisfaction change in old age: Results from an 8-year longitudinal study. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences, 68*(4), 540.

García, C. B., García, J., López Martín, M. M., & Salmerón, R. (2015). Collinearity: Revisiting the variance inflation factor in ridge regression. *Journal of Applied Statistics*, *42*(3), 648-661.

Ginsberg, T. B., Pomerantz, S. C., & Kramer-Feeley, V. (2005). Sexuality in older adults: Behaviours and preferences. *Age and Ageing, 34*(5), 475-480. doi:10.1093/ageing/afi143

Ginter, E., & Simko, V. (2013). Women live longer than men. *Bratislavské Lekárske Listy,114*(2), 45-49.

González-Carrasco, M., Casas, F., Malo, S., Viñas, F., & Dinisman, T. (2017). Changes with age in subjective well-being through the adolescent years: Differences by gender. *Journal of Happiness Studies, 18*(1), 63-88. doi:10.1007/s10902-016-9717-1

Grewen, K. M., & Light, K. C. (2011). Plasma oxytocin is related to lower cardiovascular and sympathetic reactivity to stress. *Biological Psychology, 87*(3), 340-349. doi:10.1016/j.biopsycho.2011.04.003

Gurven, M., Von Rueden, C., Massenkoff, M., Kaplan, H., & Lero Vie, M. (2013). How universal is the Big Five? Testing the five-factor model of personality variation among forager–farmers in the Bolivian Amazon. *Journal of Personality and Social Psychology, 104*(2), 354.

Hamilton, L. D., Rellini, A. H., & Meston, C. M. (2008). Cortisol, sexual arousal, and affect in response to sexual stimuli. *Journal of Sexual Medicine, 5*(9), 2111-2118. doi:10.1111/j.1743-6109.2008.00922.x

Hawkley, L. C., & Cacioppo, J. T. (2007). Aging and loneliness: Downhill quickly? *Current Directions in Psychological Science, 16*(4), 187-191. doi:10.1111/j.1467-8721.2007.00501.x

He, W., Goodkind, D., & Kowal, P. (2016). An aging world: 2015. *United States Census Breau,*1-175.

Hearn, S., Saulnier, G., Strayer, J., Glenham, M., Koopman, R., & Marcia, J. E. (2012). Between integrity and despair: Toward construct validation of Erikson's eighth stage. *Journal of Adult Development, 19*(1), 1-20.

Herd, P., Carr, D., & Roan, C. (2014). Cohort profile: Wisconsin longitudinal study (WLS). *International journal of epidemiology*, *43*(1), 34-41.

Hill, P. L., & Turiano, N. A. (2014). Purpose in life as a predictor of mortality across adulthood. *Psychological Science, 25*(7), 1482-1486.

Hinchliff, S., & Gott, M. (2011). Seeking medical help for sexual concerns in mid-and later life: a review of the literature. *Journal of sex research*, *48*(2-3), 106-117.

Hinchliff, S., & Gott, M. (2016). Ageing and sexuality in Western societies: Changing perspectives on sexual activity, sexual expression, and the sexy older body. In E. Peel & R. Harding, *Ageing and sexualities: Interdisciplinary perspectives* (11-31). New York, NY: Routledge.

Hoare, C. (2009). Models of adult development in Bronfenbrenner's bioecological theory and Erikson's biopsychosocial, life stage theory: Moving to a more complete three-model view. In M. C. Smith & N. DeFrates-Densch (Eds.), *Handbook of research on adult learning and development*. (pp. 68-102). New York: Routledge.

Holmbeck, G. N. (1997). Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: Examples from the child-clinical and pediatric psychology literatures. *Journal of Consulting and Clinical Psychology, 65*, 599–610.

Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social relationships and mortality risk: A meta-analytic review. *PLoS Medicine, 7*(7), e1000316. doi:10.1371/journal.pmed.1000316

Homan, K. J. (2016). Self-compassion and psychological well-being in older adults. *Journal of Adult Development*, *23*(2), 111-119.

Houck, C. D., Barker, D., Rizzo, C., Hancock, E., Norton, A., & Brown, L. K. (2014). Sexting and sexual behavior in at-risk adolescents. *Pediatrics*, *133*(2), e276-e282.

Hudson, C. G. (2005). Socioeconomic status and mental illness: Tests of the social causation and selection hypotheses. *American journal of Orthopsychiatry*, *75*(1), 3-18.

Huguet, N., Kaplan, M. S., & Feeny, D. (2008). Socioeconomic status and health-related quality of life among elderly people: results from the Joint Canada/United States Survey of Health. *Social science & medicine*, *66*(4), 803-810.

IBM Corp. Released 2016. IBM SPSS Statistics for Windows, Version 24.0. Armonk, NY: IBM Corp.

Jamieson, J. P., Nock, M. K., & Mendes, W. B. (2012). Mind over matter: reappraising arousal improves cardiovascular and cognitive responses to stress. *Journal of Experimental Psychology: General*, *141*(3), 417-422.

Jeste, D. V., & Oswald, A. J. (2014). Individual and societal wisdom: explaining the paradox of human aging and high well-being. *Psychiatry*, *77*(4), 317-330.

Jeste, D. V., Savla, G. N., Thompson, W. K., Vahia, I. V., Glorioso, D. K., Martin, A. S., et al. (2013). Association between older age and more successful aging: Critical role of resilience and depression. *American Journal of Psychiatry, 170*, 188-196.

John, O. (1990). The big five factor taxonomy: Dimensions of personality in the natural language and questionnaires. In: L. A. Pervin (Ed.), *Handbook of personality: Theory and research* (pp. 66-100). New York: Guilford Press.

John, O. P., Donahue, E. M., & Kentle, R. L. (1991). *The Big Five Inventory—Versions 4a and 54*. Berkeley: University of California at Berkeley, Institute of Personality and Social Research.

John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative big five trait taxonomy: History, measurement, and conceptual issues. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 114-158). NY: The Guilford Press.

Jokela, M., Batty, G. D., Hintsa, T., Elovainio, M., Hakulinen, C., & Kivimäki, M. (2014). Is personality associated with cancer incidence and mortality? An individual-participant meta-analysis of 2156 incident cancer cases among 42 843 men and women. *British journal of cancer*, *110*(7), 1820-1824.

Jylhä, P., & Isometsä, E. (2006). The relationship of neuroticism and extraversion to symptoms of anxiety and depression in the general population. *Depression and anxiety*, *23*(5), 281-289.

Kafka, G. J., & Kozma, A. (2002). The construct validity of Ryff's scales of psychological well-being (SPWB) and their relationship to measures of subjective well-being. *Social Indicators Research*, *57*(2), 171-190.

Kahlbaugh, P., & Huffman, L. (2017). Personality, emotional qualities of leisure, and subjective well-being in the elderly. *The International Journal of Aging and Human Development, 85*(2), 164-184. doi:10.1177/0091415016685329

Kalra, G., Subramanyam, A., & Pinto, C. (2011). Sexuality: Desire, activity and intimacy in the elderly. *Indian Journal of Psychiatry, 53*(4), 300-306. doi:10.4103/0019-5545.91902

Kang, H. (2013). The prevention and handling of the missing data. *Korean Journal of Anesthesiology*, *64*(5), 402-406.

Kashdan, T. B., Blalock, D. V., Young, K. C., Machell, K. A., Monfort, S. S., McKnight, P. E., & Ferssizidis, P. (2017). Personality Strengths in Romantic relationships: Measuring Perceptions of Benefits and Costs and Their Impact on Personal and Relational Well-Being. *Psychological Assessment 1*, 1-18.

Kashy, D. A., Donnellan, M. B., Ackerman, R. A., & Russell, D. W. (2009). Reporting and interpreting research in PSPB: Practices, principles, and pragmatics. *Personality and Social Psychology Bulletin, 35*(9), 1131-1142. doi:10.1177/0146167208331253

Keith, T. (2006). *Multiple regression and beyond*. PEARSON Allyn & Bacon.

Kempen, G. I., Brilman, E. I., Ranchor, A. V., & Ormel, J. (1999). Morbidity and quality of life and the moderating effects of level of education in the elderly. *Social science & medicine*, *49*(1), 143-149.

Keyes, C. L. M. (2002). Mental health continuum: From languishing to flourishing in life. Journal of Health and Social Research, 43, 207-222.

Keyes, C. L., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: the empirical encounter of two traditions. *Journal of personality and social psychology*, *82*(6), 1007-1022.

Khanbani, M., Aghaee, A., & Parvar, M. G. (2014). Examining the relationship between gender and psychological well-being. *Journal of Sociological Research*, *5*(1), 53-58.

Kuehn, B. M. (2008). Time for "the talk" – again: Seniors need information on sexual health. *JAMA, 300*(11), 1285-1287.

Kulhánová, I., Hoffmann, R., Judge, K., Looman, C. W., Eikemo, T. A., Bopp, M., ... & Wojtyniak, B. (2014). Assessing the potential impact of increased participation in higher education on mortality: evidence from 21 European populations. *Social science & medicine*, *117*, 142-149.

Kurtus, R. (2017). What is Physical Health? Retrieved November 29, 2017, from http://www.school-for-champions.com/health/what_is_health.htm#.Wh7INdUrKUk

Lamers, S. M., Glas, C. A., Westerhof, G. J., & Bohlmeijer, E. T. (2012). Longitudinal evaluation of the mental health continuum-short form (MHC-SF). *European Journal of Psychological Assessment*.

Lamers, S. M., Westerhof, G. J., Glas, C. A., & Bohlmeijer, E. T. (2015). The bidirectional relation between positive mental health and psychopathology in a

longitudinal representative panel study. *The Journal of Positive Psychology, 10*(6), 553-560.

Lang, I. A., Llewellyn, D. J., Hubbard, R. E., Langa, K. M., & Melzer, D. (2011). Income and the midlife peak in common mental disorder prevalence. *Psychological Medicine, 41*, 1365-1372.

Långström, N., & Hanson, R. K. (2006). High rates of sexual behavior in the general population: Correlates and predictors. *Archives of Sexual Behavior, 35*(1), 37-52. doi:10.1007/s10508-006-8993-y

Leitzmann, M. F., Platz, E. A., Stampfer, M. J., Willett, W. C., & Giovannucci, E. (2004). Ejaculation frequency and subsequent risk of prostate cancer. *Jama, 291*(13), 1578-1586. doi:10.1001/jama.291.13.1578

Levenson, J. S., Willis, G. M., & Prescott, D. S. (2016). Adverse childhood experiences in the lives of male sex offenders: Implications for trauma-informed care. *Sexual Abuse*, *28*(4), 340-359.

Levy, B. R., Ding, L., Lakra, D., Kosteas, J., Niccolai, L. (2007). Older persons' exclusion from sexually transmitted disease risk-reduction clinical trials. *Sexually Transmitted Diseases, 34*(8), 541-544.

Li, R., Kao, C., & Wu, Y. (2015). Gender differences in psychological well-being: Tests of factorial invariance. *Quality of Life Research, 24*(11), 2577-2581. doi:10.1007/s11136-015-0999-2

Lindau, S. T., & Gavrilova, N. (2010). Sex, health, and years of sexually active life gained due to good health: evidence from two US population based cross sectional surveys of ageing. *BMJ*, *340*, c810.

Lindau, S. T., Schumm, L. P., Laumann, E. O., Levinson, W., O'Muircheartaigh, C. A., & Waite, L. J. (2007). A study of sexuality and health among older adults in the united states. *The New England Journal of Medicine, 357*(8), 762-774. doi:10.1056/NEJMoa067423

Löfqvist, C., Granbom, M., Himmelsbach, I., Iwarsson, S., Oswald, F., & Haak, M. (2013). Voices on relocation and aging in place in very old age: A complex and ambivalent matter. *The Gerontologist*, *53*(6), 919-927.

Lordan, G., Soto, E. J., Brown, R. P., & Correa-Valez, I. (2012). Socioeconomic status and health outcomes in a developing country. *Health economics*, *21*(2), 178-186.

Lucas, R. E., & Diener, E. (2008). Personality and subjective well-being. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 795–815). New York: The Guilford Press.

Lucas, R. E., & Donnellan, M. B. (2009). Age differences in personality: Evidence from a nationally representative Australian sample. *Developmental Psychology, 45*, 1353–1363. doi:10.1037/a0013914

Luy, M., & Gast, K. (2014). Do women live longer or do men die earlier? Reflections on the causes of sex differences in life expectancy. *Gerontology*, *60*(2), 143-153.

MacCallum, R. C., & Austin, J. T. (2000). Applications of structural equation modeling in psychological research. *Annual Review of Psychology, 51*(1), 201-226. doi:10.1146/annurev.psych.51.1.201

Madden, D. (2010). Gender differences in mental well-being: A decomposition analysis. *Social Indicators Research, 99*(1), 101-114. doi:10.1007/s11205-009-9569-8

Mahieu, L., & Gastmans, C. (2012). Sexuality in institutionalized elderly persons: a systematic review of argument-based ethics literature. *International Psychogeriatrics*, *24*(3), 346-357.

Maroof, R. Y., & Khan, M. J. (2016). Age and gender as predictors of psychological well-being. *The Journal of Humanities and Social Sciences, 24*(1), 43-58.

McAuliffe, R. E. (2005), Durbin-Watson statistic, *Wiley Encyclopedia of Management, 8*, doi: 10.1002/9781118785317.weom080142.

McCrae, R. R., & Costa, P. T., Jr. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology, 52*, 81-90.

McCrae, R. R., & Costa, P. T. (1990). Personality in adulthood. New York: Guilford Press.

McCrae, R. R., & Costa, P. T. (1997). Personality trait structure as a human universal. *American Psychologist, 52*(5), 509-516. doi:10.1037/0003-066X.52.5.509

McCrae, R. R., & Costa, Jr P. T., (2008). A five-factor theory of personality. In O. P. John, R. W. Robins, & L. A. Pervin (3rd Eds.), *Handbook of personality: Theory and research* (pp. 159–181). New York, NY: Guilford Press.

McCrae, R. R., Terracciano, A., & 78 Members of the Personality Profiles of Cultures Project. (2005). Universal features of personality traits from the observer's perspective: Data from 50 cultures. *Journal of Personality and Social Psychology, 88*(3), 547-561. doi:10.1037/0022-3514.88.3.547

Mellor, R. M., Greenfield, S. M., Dowswell, G., Sheppard, J. P., Quinn, T., & McManus, R. J. (2013). Health care professionals' views on discussing sexual wellbeing with patients who have had a stroke: a qualitative study. *PloS one*, *8*(10), e78802.

Merghati-Khoei, E., Pirak, A., Yazdkhasti, M., & Rezasoltani, P. (2016). Sexuality and elderly with chronic diseases: A review of the existing literature. *Journal of Research in Medical Sciences, 21*(1), 136-136. doi:10.4103/1735-1995.196618

Menard, S. (1995). *Applied Logistic Regression Analysis: Sage University Series on Quantitative Applications in the Social Sciences*. Thousand Oaks, CA: Sage.

Miller, P. H. (2011). Freud's and Erikson's psychoanalytic theories. In P. H. Miller (Eds.), *Theories of developmental psychology*. (5th ed. pp. 68-102). New York, NY: Worth Publishers.

Miller, V. M., & Bahn, R. S. (2013). Mentoring interdisciplinary research teams for the study of sex and gender differences in health and disease. *Global Advances in Health and Medicine, 2*(5), 109-112. doi:10.7453/gahmj.2013.057

Minichiello, V., Rahman, S., Hawkes, G., & Pitts, M. (2012). STI epidemiology in the global older population: Emerging challenges. *Perspectives in Public Health*, *132*(4), 178-181.

Mõttus, R., McNeill, G., Jia, X., Leone C A Craig, Starr, J. M., & Deary, I. J. (2013). The associations between personality, diet and body mass index in older people. *Health Psychology: Official Journal of the Division of Health Psychology, American Psychological Association, 32*(4), 353-360. doi:10.1037/a0025537

Mustanski, B., Birkett, M., Greene, G. J., Rosario, M., Bostwick, W., & Everett, B. G. (2014). The association between sexual orientation identity and behavior across

race/ethnicity, sex, and age in a probability sample of high school students. *American Journal of Public Health*, *104*(2), 237-244.

Neugarten, B. L. (1973). Personality change in late life: A developmental perspective. In C. Eisdorfer & M. P. Lawton (Eds.), *The psychology of adult development and aging* (pp. 311–335). Washington, DC: American Psychological Association.

Neugarten, B. L., Havighurst, R. J., & Tobin, S. S. (1961). The measurement of life satisfaction. *Journal of Gerontology, 16*, 134-143.

Neyer, F. J., & Lehnart, J. (2007). Relationships matter in personality development: Evidence from an 8-year longitudinal study across young adulthood. *Journal of Personality, 75*, 535–568. doi:10.1111/j.1467- 6494.2007.00448.x

Nguyen, C., Wong, Y., Juang, L., & Park, I. (2015). Pathways among Asian Americans' family ethnic socialization, ethnic identity, and psychological well-being: A multigroup mediation model. *Asian American Journal of Psychology, 6*(3), 273-280. doi:10.1037/aap0000026

Onder, G., Penninx, B., Guralnik, J., Jones, H., Fried, L., Pahor, M., & Williamson, J. (2003). Sexual satisfaction and risk of disability in older women. *Journal of Clinical Psychiatry, 64*(10), 1177-1182. doi:10.4088/JCP.v64n1006

Orth, U., Trzesniewski, K. H., & Robins, R. W. (2010). Self-esteem development from young adulthood to old age: a cohort-sequential longitudinal study. *Journal of Personality and Social Psychology*, *98*(4), 645-658.

Ortman, J. M., Velkoff, V. A., & Hogan, H. (2014). *An aging nation: the older population in the United States* (pp. 25-1140). United States Census Bureau, Economics and Statistics Administration, US Department of Commerce.

Osborne, J., & Waters, E. (2002). Four assumptions of multiple regression that researchers should always test. *Practical Assessment, Research & Evaluation, 8*(2). Retrieved from: http://PAREonline.net/getvn.asp?v=8&n=2

Parker, G., & Brotchie, H. (2010). Gender differences in depression. *International Review of Psychiatry, 22*(5), 429-436. doi:10.3109/09540261.2010.492391

Perez, J.A. (2012), Gender difference in psychological well-being among Filipino college students samples. *International Journal of Humanities and Social Science, 2*(13), 84-93.

Peugh, J. L., & Enders, C. K. (2004). Missing data in educational research: A review of reporting practices and suggestions for improvement. *Review of Educational Research*, *74,* 525-556.

Puentes, W. J., Bradway, C. K., Adelage, M. (2010). Older adult mental health: Teaching senior-level baccalaureate nursing students what they need to know. *Journal of Gerontological Nursing, 36*(7), 44-53.

Riediger, M., Li, S.-C., & Lindenberger, U. (2006). Selection, optimization, and compensation as developmental mechanisms of adaptive resource allocation: Review and preview. In J. E. Birren & K. W. Schaie (Eds.), *The handbooks of aging (Vol.2. Handbook of the psychology of aging*, pp. 289-313). Amsterdam: Elsevier.

Roberts, B. W., Wood, D., & Caspi, A. (2008). The development of personality traits in adulthood. In O. P. John, R. W. Robins, & L. A. Pervin (3rd Eds.), *Handbook of personality: Theory and research* (pp. 375-398). New York, NY: Guilford Press.

Roberts, B. W., & Takahashi, Y. (2011). Personality trait development in adulthood: Patterns and implications. *The Japanese Journal of Personality*, *20*(1), 1-10.

Roberts, B. W., Walton, K. E., & Viechtbauer, W. (2006). Patterns of mean-level change in personality traits across the life course: A meta-analysis of longitudinal studies. *Psychological Bulletin, 132*, 1–25. doi: 10.1037/0033-2909.132.1.1

Roth, P. L. (1994). Missing data: A conceptual review for applied psychologists. *Personnel Psychology, 47*(3), 537-560.

Rowe, J. W. & Kahn, R. L. (1987). Human ageing: Usual and successful. *Science, 237*(4811), 143-149.

Rowe, J. W., & Kahn, R. L. (1997). Successful aging. *The Gerontologist, 37*(4), 433-440. doi:10.1093/geront/37.4.433

Russell, E. B. (2012). Sexual health attitudes, knowledge, and clinical behaviors: Implications for counseling. *The Family Journal, 20*(1), 94-101. doi:10.1177/1066480711430196

Ryff, C. D. (1989a). Beyond ponce de leon and life satisfaction: New directions in quest of successful aging. *International Journal of Behavioral Development, 12*, 35-55.

Ryff, C. D. (1989b). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57*(6), 1069-1081.

Ryff, C. D. (2008). Challenges and opportunities at the interface of aging, personality, and wellbeing. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 399-418). New York, NY: Guilford Press.

Ryff, C. D. (2014). Psychological well-being revisited: Advances in the science and practice of eudaimonia. *Psychotherapy and Psychosomatics*, *83*(1), 10-28.

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69*(4), 719-727. doi:10.1037/0022-3514.69.4.719

Ryff, C. D., & Singer, B. (1996). Psychological well-being: Meaning, measurement, and implications for psychotherapy research. *Psychotherapy and Psychosomatics*, *65*(1), 14-23.

Salleh, N. B., & Mustaffa, C. S. B. (2016). Examining the differences of gender on psychological well-being. *International Review of Management and Marketing, 6*(8), 82-87.

Schafer, J. L., (1997). *Analysis of incomplete multivariate data.* London: Chapman & Hall.

Schick, V., Herbenick, D., Reece, M., Sanders, S. A., Dodge, B., Middlestadt, S. E., & Fortenberry, J. D. (2010). Sexual behaviors, condom use, and sexual health of Americans over 50: Implications for sexual health promotion for older adults. *The Journal of Sexual Medicine, 7*(5), 315-329.

Schroder, K. E., Carey, M. P., & Vanable, P. A. (2003). Methodological challenges in research on sexual risk behavior: Accuracy of self-reports. *Annals of behavioral medicine*, *26*(2), 104-123.

Segerstrom, S. C., & Miller, G. E. (2004). Psychological stress and the human immune system: A meta-analytic study of 30 years of inquiry. *Psychological Bulletin, 130*(4), 601-630. doi:10.1037/0033-2909.130.4.601

Seifarth, J. E., McGowan, C. L., & Milne, K. J. (2012). Sex and life expectancy. *Gender medicine*, *9*(6), 390-401.

Seligman, M. E. (2011). *Flourish: A visionary new understanding of happiness and well-being*. Simon and Schuster.

Seligman, M. E., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*(1), 5-14.

Seligman, M. E., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American psychologist*, *60*(5), 410-420.

Sewell, W. H., Hauser, R. M., Springer, K. W., & Hauser, T. S. (2003). As we age: A review of the Wisconsin Longitudinal Study, 1957–2001. *Research in Social Stratification and Mobility*, *20*, 3-111.

Sheldon, B. (2015). *Developmental psychology for the helping professions: Evidence-based practice in health and social care.* New York, NY: Palgrave Macmillan.

Short, M. E., Goetzel, R. Z., Pei, X., Tabrizi, M. J., Ozminkowski, R. J., Gibson, T. B., ... & Wilson, M. G. (2009). How accurate are self-reports? An analysis of self-reported healthcare utilization and absence when compared to administrative data. *Journal of occupational and environmental medicine/American College of Occupational and Environmental Medicine*, *51*(7), 786-796.

Silverstein, M., & Giarrusso, R. (2010). Aging and family life: A decade review. *Journal of Marriage and Family*, *72*(5), 1039-1058.

Simon, W. (2017). *Sexual conduct: The social sources of human sexuality*. Routledge.

Smith, B., Chu, L. K., Smith, T. C., Amoroso, P. J., Boyko, E. J., Hooper, T. I., ... & Ryan, M. A. (2008). Challenges of self-reported medical conditions and electronic medical records among members of a large military cohort. *BMC Medical Research Methodology*, *8*(37), 1-10.

Soto, C. J., & John, O. P. (2009). Ten facet scales for the Big Five Inventory: Convergence with NEO PI-R facets, self-peer agreement, and discriminant validity. *Journal of Research in Personality*, *43*(1), 84-90.

Soto, C. J., John, O. P., Gosling, S. D., & Potter, J. (2011). Age differences in personality traits from 10 to 65: Big Five domains and facets in a large cross-sectional sample. *Journal of Personality and Social Psychology, 100*, 330–348. doi:10.1037/a0021717

Spahni, S., Morselli, D., Perrig-Chiello, P., & Bennett, K. M. (2015). Patterns of psychological adaptation to spousal bereavement in old age. *Gerontology*, *61*(5), 456-468.

Spector, P. E., & Brannick, M. T. (2011). Methodological urban legends: The misuse of statistical control variables. *Organizational Research Methods*, *14*(2), 287-305.

Steel, P., Schmidt, J., & Shultz, J. (2008). Refining the relationship between personality and subjective well-being. *Psychological Bulletin, 134*(1), 138-161. doi:10.1037/0033-2909.134.1.138

Stevernick, N. (2014). Successful development and aging: Theory and intervention. In N.A Pachana, & K. Laidlaw, *The oxford handbook of clinical geropsychology* (pp. 84-103). United Kingdom: Oxford University Press.

Stone, A. A., Schwartz, J. E., Broderick, J. E., & Deaton, A. (2010). A snapshot of the age distribution of psychological well-being in the United States. *Proceedings of the National Academy of Sciences, 107*, 9985-9990.

Stuart-Hamilton, I. (2006). *The psychology of ageing: An introduction* (4th ed.). London: Jessica Kingsley Publishers.

Sutipan, P., Intarakamhang, U., & Macaskill, A. (2017). The impact of positive psychological interventions on well-being in healthy elderly people. *Journal of Happiness Studies*, *18*(1), 269-291.

Syme, M. (2014). The evolving concept of older adult sexual behavior and its benefits. *Generations-Journal of the American Society on Aging, 38*(1), 35-41.

Taylor, A., & Gosney, M. A. (2011). Sexuality in older age: Essential considerations for healthcare professionals. *Age and Ageing*, *40*(5), 538-543.

Taylor, W. D. (2014). Depression in the elderly. *New England journal of medicine*, *371*(13), 1228-1236.

Terracciano, A., McCrae, R. R., Brant, L. J., & Costa, P. T., Jr. (2005). Hierarchical linear modeling analyses of the NEO-PI–R scales in the Baltimore Longitudinal Study of Aging. *Psychology and Aging, 20*, 493–506. doi:10.1037/0882-7974.20.3.493

Torges, C. M., Stewart, A. J., & Duncan, L. E. (2008). Achieving ego integrity: Personality development in late midlife. *Journal of Research in Personality, 42*(4), 1004-1019.

Tzelgov, J., & Henik, A. (1991). Suppression situations in psychological research: Definitions, implications, and applications. *Psychological Bulletin*, *109*(3), 524-536.

United Nations Development Division. (2015). *World population prospects: The 2015 revision*. Retrieved from: https://esa.un.org/unpd/wpp/publications/files/key_findings_wpp_2015.pdf, assessed August 27, 2017.

Valenzuela, M. J., & Sachdev, P. (2006). Brain reserve and dementia: a systematic review. *Psychological medicine*, *36*(4), 441-454.

Voyer, D., & Voyer, S. (2014). Gender differences in scholastic achievement: A meta-analysis. *Psychological Bulletin, 140*(4), 1174-1204. doi:10.1037/a0036620

Wang, V., Depp, C., Ceglowski, J., Thompson, W., Rock, D., & Jeste, D. (2015). Sexual health and function in later life: A population-based study of 606 older adults with a partner. *American Journal of Geriatric Psychiatry, 23*(3), 227-233. doi:10.1016/j.jagp.2014.03.006

Weinfurt, K. P. (2000). Repeated measures analyses: ANOVA, MANOVA, and HLM. In L. G. Grimm & P. R. Yarnold (Eds.), *Reading and understanding more multivariate statistics* (pp. 317-361). Washington, DC: American Psychological Association

Wilcox, R. (2012). *Introduction to robust estimation and hypothesis testing* (3rd ed.). Waltham, MA: Elsevier.

Wilson, R. S., Krueger, K. R., Gu, L., Bienias, J. L., de Leon, C. F. M., & Evans, D. A. (2005). Neuroticism, extraversion, and mortality in a defined population of older persons. *Psychosomatic medicine*, *67*(6), 841-845.

Wisconsin Longitudinal Study (WLS) [graduates, siblings, and spouses]: 1957-2017 Version 13.06. [machine-readable data file] / Hauser, Robert M., William H. Sewell, and Pamela Herd. [principal investigator(s)]. Madison, WI: University of Wisconsin-Madison, WLS. [distributor]; http://www.ssc.wisc.edu/wlsresearch/documentation/

World Health Organization. (2010). Measuring sexual health: Conceptual and practical considerations and related indicators. *World Health Organization,* 1-22.

World Health Organization. (2011). Global health and aging. *Geneva: World Health Organization*, 1-32.

Wright, M. R., & Brown, S. L. (2016). Psychological well-being among older adults: The role of partnership status. *Journal of Marriage and Family, 79*, 833-849. doi:10.1111/jomf.12375

Wright, H., & Jenks, R. A. (2016). Sex on the brain! Associations between sexual activity and cognitive function in older age. *Age and ageing*, *45*(2), 313-317.

Wrzus, C., Hänel, M., Wagner, J., & Neyer, F. J. (2012). Social network changes and life events across the life span: A meta-analysis. *Psychological Bulletin*, *139*(1), 1-28.

Wylie, K. R., Wood, A., & McManus, R. (2013). Sexuality and old age. *Bundesgesundheitsblatt-Gesundheitsforschung-Gesundheitsschutz*, *56*(2), 223-230.

Zillig, L. M. P., Hemenover, S. H., & Dienstbier, R. A. (2002). What do we assess when we assess a Big 5 trait? A content analysis of the affective, behavioral, and

cognitive processes represented in Big 5 personality inventories. *Personality and Social Psychology Bulletin*, *28*(6), 847-858.