2018

Ageism Among Healthcare Professionals: The Influence of Personal Aging Anxiety, Job Role, and Work Setting on Attitudes Toward Older Patients

Jennifer L. K. Inker

Virginia Commonwealth University

Ageism Among Healthcare Professionals: The Influence of Personal Aging Anxiety, Job Role, and Work Setting on Attitudes Toward Older Patients

A dissertation proposal submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University

by

Jennifer K. Inker
MS Gerontology, Virginia Commonwealth University, 2013
MBA Healthcare Administration, George Washington University, 2009
Master of Science, Strategic Housing Management, University of Cardiff, 1996
Post Graduate Diploma in Housing, University of Cardiff, 1991
BA, George Washington University, 1984

Director: Tracey Gendron, PhD
Associate Professor, Department of Gerontology

Virginia Commonwealth University
Richmond, Virginia
February, 2018

Acknowledgements

I would like to sincerely thank my dissertation chair, Dr. Tracey Gendron, and my dissertation committee members Dr. J. James, Cotter, D. E. Ayn Welleford, and Dr. Christine Jensen for their on-going guidance, wisdom, encouragement, and support from the conception of this project to its culmination. Each in their own way shone a light along my path that kept the way forward toward my goal constantly illuminated. Dr. Gendron's passion and enthusiasm for exploring ageism, her generosity in sharing her time and skills, and her wise and kind counsel about how a dissertation gets done were a beacon of light in times when the path seemed cloaked in shadows. Dr Cotter's guidance on honing my thinking and my writing skills has help me to develop both immeasurably and I will always remember what I have learned from him. Dr Welleford's courageous creation of a Gerontology Department that supports deep inquiry and expects its application in the world has been nothing short of revolutionary to my thinking and my subsequent research. Dr. Jensen's gracious, enthusiastic, and tireless support for my research and her assistance in helping me access healthcare professionals were instrumental to the success of this dissertation. The work simply could not have been achieved without the support of these inspirational mentors and colleagues.

There are others to whom I owe a deep debt of gratitude. My mother Carol inspired me as the first healthcare professional I came to know personally and encouraged my enquiry from the beginning and throughout. My father John developed in me a deep love of learning and

understanding, as well as writing. My husband Peter kept our love and a household going while I worked, sometimes incessantly, and he reminded me often that I could accomplish this goal. My children Alex, Hanni, Gaia, and Tess all patiently supported me throughout this process, even when it meant forestalling or curtailing family plans. And my dear friend Lane literally walked the path of this dissertation with me, providing love, support, wisdom, and comfort during the entire journey as we walked and talked on our weekly rambles. I love you all.

Table of Contents

List of Tables ix

List of Figures xi

Abstract xii

Chapter One: Introduction 1

Chapter Overview 1

Background 1

Statement of the Problem 3

Study Purpose 4

Study Significance 4

Introduction to Theoretical Framework 5

Assumptions 6

Delimitations 7

Summary of Data Sources 7

Definition of Terms 8

Chapter Summary and Overview of Remaining Chapters 9

Chapter Two: Literature Review 10

Chapter Overview 10

Demographic Trends of the Older U.S. Population and Their Healthcare Utilization 10

Trends in the Population of Healthcare Providers Specializing in Older Adults 11
The Biomedicalization of Aging.....13
Ageism 15
Levels of Ageism 17
Tripartite Model of Ageism: Stereotypes, Attitudes, Behavior 18
Age Stereotypes 18
Attitudes toward aging and personal aging anxiety 19
Ageist behaviors 20
Application of the Tripartite Model of Ageism to Healthcare.....21
Stereotypes of older patients 21
Attitudes of healthcare professionals toward older patients 23
Physicians' attitudes toward older patients.....23
Nurses' attitudes toward older patients 24
Attitudes of other healthcare professionals toward older patients.....25
Attitudes of healthcare professionals toward their own aging.....26
Ageist behaviors in healthcare 27
The Theory of Relational Ageism.....29
Application of the Theory of Relational Ageism to Healthcare 30
Personal aging anxiety and attitudes toward older patients 33
Job role and attitudes toward older patients.....33
Work setting and attitudes toward older patients.....34
High technology work settings.....34
Time constrained work settings 35

Work settings associated with impoverished environments 36
Other work settings 36
The intersection between personal aging anxiety, job role, and work setting and attitudes toward older patients 36
Demographic variables 37
Gender 37
Age 38
Race and ethnicity 38
Level and type of education 38
Years of experience 39
Research Questions 40
Aims and Hypotheses 41
Chapter Summary 45
Chapter Three: Methodology 46
Chapter Overview 46
Research Design 46
Population and Sample 47
Target population 47
Research setting 47
Sampling strategy 48
Eligibility criteria 50
Power Analysis 50
Variables and Instrumentation 53

Background and demographics variables and instrumentation 53
Job role and work setting variables and instrumentation.....54
Personal aging anxiety variable and instrumentation.....55
The aging anxiety scale.....56
Attitudes toward older patients variable and instrumentation 57
The geriatric attitudes scale.....57
Data Collection 58
Study survey.....58
Pilot survey 60
Data Analysis.....60
Data cleaning.....60
Descriptive statistics 62
Bivariate correlation analysis.....62
Multivariate analysis: Multiple linear regression 62
Study aim 1: Demographic variables 67
Study aim 2: Job role variable.....66
Study aim 3: Work setting variable.....67
Study aim 4: Personal aging anxiety variable.....67
Study aim 5: Job role, work setting, and personal aging anxiety variables..... 68
Moderation analyses 68
Study Validity.....69
Chapter Summary 69

Chapter Four: Results 71

Chapter Overview 71

Data Collection 71

Data Cleaning and Preparation 72

Missing values analysis 73

Intercorrelational analysis of multicollinearity 73

Univariate outliers 75

Descriptive Statistics 76

Study Variables Intercorrelation Analysis 79

Bivariate correlation analysis 79

Group differences in aging anxiety and geriatric attitudes scale scores 81

Multiple Regression Analysis: Test of Assumptions 83

Assumption of sufficient ratio of cases to IVs 86

Assumptions of linearity, homoscedasticity, multicollinearity, multivariate outliers, and normality 86

Multiple Regression Analysis: Hypothesis Testing 87

Study aim one 87

Study aim two 87

Study aim three 88

Study aim four 91

Study aim five 93

Moderation analyses 94

Aging anxiety and job role 96

Aging anxiety and work setting 97

Summary of Findings 97

Chapter Five: Discussion 101

Chapter Introduction 101

Overview 101

Study Results 102

Characteristics of the sample 102

The predictive capacity of sociodemographic variables 102

The predictive capacity of job role 103

The predictive capacity of work setting 105

The predictive capacity of aging anxiety 107

The moderating effect of job role and work setting 108

Limitations 109

Conclusions 110

References 113

Appendix A 130

Appendix B 131

Appendix C 133

Appendix D 134

Appendix E 136

Vita 144

List of Tables

Table 1. Iversen, Larsen and Solem's Variants of Ageism 18

Table 2. Literature Review of Stereotypes of Older Patients 22

Table 3. Inclusion and Exclusion Criteria 51

Table 4. Required Sample Sizes by Effect Sizes: Best Case Scenario 52

Table 5. Required Sample Sizes by Effect Sizes: Worst Case Scenario 52

Table 6. Study Variables 54

Table 7. Summary of Feedback from Survey Pilot 61

Table 8. Respondent Demographics 63

Table 9. Assumptions of Multivariate Regression 66

Table 10. Potential Threats to Validity and Control of Threats 70

Table 11. Original and Collapsed Categorical Predictor Variables 74

Table 12. Demographic Characteristics of Participants 77

Table 13. Geriatric and Gerontological Qualifications of Healthcare Professionals 78

Table 14. Other Clinicians 78

Table 15. Summary of Intercorrelations for Continuous Predictor Variables and Outcome Variable 80

Table 16. Summary of Intercorrelations for Dichotomous Categorical Predictor Variables and OutcomeVariable 82

Table 17. Aging Anxiety by Job Role and Work Setting 84

Table 18. Attitudes to Older Patients by Job Role and Work Setting..... 85

Table 19. Regression of Attitudes to Older Patients on Sociodemographic Characteristics 88

Table 20. Regression of Attitudes to Older Patients on Geriatric/Gerontological Education and Job Role…….....89

Table 21. Regression of Attitudes to Older Patients on Geriatric/Gerontological Education, Job Role, and Work Setting 90

Table 22. Regression of Attitudes to Older Patients on Geriatric/Gerontological Education, Job Role, Work Setting, and Aging Anxiety 92

Table 23. Hierarchical Multiple Regression Predicting Attitudes to Older Patients from All… Sociodemographic Variables, Job Role, Work Setting, and Aging Anxiety 94

Table 24. Multiple Regression Analysis Testing Moderation of Job Role Predictor and Attitudes to Older Patients by Aging Anxiety 97

Table 25. Multiple Regression Analysis Testing Moderation of Work Setting Predictor and…… Attitudes to Older Patients by Aging Anxiety 98

Table 26. Summary of Study Findings 98

List of Figures

Figure 1. Relational Ageism Theory..... 30
Figure 2. Relational ageism in the professional setting of healthcare 32
Figure 3. Moderation of the relationship between aging anxiety and attitudes to older patients. 95

Abstract

AGEISM AMONG HEALTHCARE PROFESSIONALS: THE INFLUENCE OF PERSONAL AGING ANXIETY, JOB ROLE, AND WORK SETTING ON ATTITUDES TOWARD OLDER PATIENTS

By Jennifer K. Inker, Ph.D.

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2018.

Major Director: Dr. Tracey Gendron, Assistant Professor Gerontology Department

Older adults make up a significant and increasing proportion of the U.S. population and are frequent users of healthcare services. Ageism in healthcare, driven by an incomplete and narrowly biomedical perspective on aging, has been linked to various problematic outcomes for older patients, including under- and over-treatment. The purpose of this study was to use the theory of relational ageism to explore the relationship between personal aging anxiety among healthcare professionals and their attitudes to older patients, considering the potentially moderating factors of job role and work setting. Using convenience sampling, clinical healthcare professionals working for a mid-sized, regional healthcare system in the Mid-Atlantic region of the United States were invited to participate in an online survey, resulting in a sample of N = 145. Independent variables in this study included the sociodemographic variables of gender, age,

race, ethnicity, level of education, formal geriatric or gerontological education, and years of expression, plus job role, work setting, and aging anxiety scores as measured by the Aging Anxiety Scale. The dependent variable was attitudes to older patients as measured by the Geriatric Attitudes Scale. Regression analysis findings suggest that while having formal geriatric or gerontological education was associated with more negative attitudes to older patients, other sociodemographic variables including gender, age, race, ethnicity, level of education, and years of experience were not predictive of attitudes to older patients. While physicians had more negative attitudes toward older patients than did nurses, therapists, and other types of clinicians, work setting was not predictive of attitudes toward older patients. Study findings also indicate that higher levels of personal aging anxiety of healthcare professionals were correlated with more negative attitudes to older patients. This study provides information that can inform diversity training for healthcare professionals in order to improve attitudes toward older patients and reduce age discrimination in healthcare. A key recommendation is the inclusion of an exploration of healthcare professionals' internalized attitudes to aging in any diversity training in order to increase awareness that these internalized attitudes about aging may influence their attitudes to older patients.

Keywords: healthcare professionals, attitudes to older patients, aging anxiety, relational ageism

Chapter One: Introduction

Chapter Overview

The purpose of this study is to explore the relationship between personal aging anxiety, job role, and work setting among healthcare professionals and their attitudes toward older patients. The study uses relational ageism as a theoretical framework to guide an exploration of how internal factors, such as personal aging anxiety, and external factors, such as job role and work setting, impact the way healthcare professionals view older patients. The study results will contribute to the literature on ageism in healthcare among qualified and currently practicing healthcare professionals. Chapter One provides a brief background on the issue of ageism in healthcare and includes a statement of the problem. The study purpose and study significance are then summarized, followed by a brief introduction to the theoretical framework of relational ageism and data sources for the study. The chapter concludes with an overview of the remaining chapters in the proposal.

Background

Older adults make up a significant and increasing proportion of the U.S. population, with estimates that one in five Americans will be age 65 or older by 2040 (Colby & Ortman, 2014). Older adults are frequent users of healthcare services and are more likely than younger adults to present with one or more chronic health conditions (Ward, Schiller, & Goodman, 2014; Administration on Aging Administration for Community Living U.S. Department of Health and Human Services, 2015). At the same time, there is a declining interest among health professions students in specializing in geriatric medicine (Committee on the Future Health Care Workforce

for Older Americans, Institute of Medicine, 2008). This reluctance has been ascribed to ageist attitudes toward older adults (Higashi, Tillack, Steinman, Harper, & Johnston, 2012), negative attitudes of healthcare professionals to their own aging (Golden, Gammonley, Hunt, Olsen, & Issenberg, 2014), and a preference to work with younger patients who have acute, curable conditions (Meiboom et al., 2015). Despite the preferences of many healthcare professionals to work with younger patients, older adults make up a significant proportion of their caseloads (Helton & Pathman, 2008).

Many healthcare professionals receive limited education about aging, and this education typically conceptualizes aging as a biological disease process resulting in decline and death (Leipzig, Granville, Simpson, Anderson, Sauvigné, & Soriano, 2009) rather than a normal, highly individualized, multi-dimensional, and multi-directional process of growth, maintenance and decline (Baltes, 1987). This biomedical approach represents a powerful and pervasive way of thinking about older patients that shapes the attitudes and actions of healthcare professionals and the "institutional thought structure" of healthcare itself (Estes & Binney, 1989, p.588). This narrow, biomedical view of aging creates and perpetuates negative attitudes to aging resulting in a phenomenon known as ageism.

The concept of ageism was first identified and given name by a medical doctor, Robert Butler, who witnessed egregious mistreatment of older patients by doctors engaged in what he interpreted as "a process of systematic stereotyping and discrimination against people because they are old" (Butler, 1975 p. 12). Numerous authors have subsequently studied ageism and refined the definition to include positive discrimination (Palmore, 1999), implicit or unconscious ageism (Nelson, 2002; Axt, Ebersole, & Nosek, 2014), and explicit or intentional ageism (Levy & Banaji, 2002). The most widely used conceptualization of ageism in research is based on the

tripartite model of attitudes that defines ageism as a composite of three interconnecting components: a) age stereotypes (cognitive); b) attitudes toward aging, including internal aging anxiety and attitudes toward older persons (affective), and c) ageist behaviors (behavioral). (Rosenberg & Hovland, 1960; Eagly & Chaikin, 1993).

The application of this tripartite model of cognition, affect, and behavior in healthcare research has shown that healthcare professionals typically hold both negative and positive stereotypes of older patients, with negative stereotypes predominating (Samra et al., 2015) as they do for older adults in general (Kotter-Grühn, & Hess, 2012). Attitudes of healthcare professionals toward older patients have been found to be complex, multidimensional, and mixed in terms of positive, neutral, and negative valences (Meisner, 2012; Liu, While, Norman, & Ye, 2015; Hweidi, & Al-Hassan, 2005; Kearney, Miller, Paul, & Smith, 2000). Healthcare professionals' attitudes to their own aging have also been found to be mixed (Gething, McKee, Goff, Churchward, & Matthews, 2002), with a correlation between lower personal aging anxiety and more positive attitudes to older patients (Liu et al., 2015). In terms of behaviors of healthcare professionals, nearly one in five patients over age 50 have self-reported being subjected to age discrimination by healthcare professionals, with 12.6% experiencing discrimination infrequently and 5.9% frequently (Rogers, Thrasher, Miao, Boscardin, & Smith, 2015).

Statement of the Problem

Ageism in healthcare, driven by an incomplete and narrowly biomedical perspective on aging, has been linked to various problematic outcomes for older patients. These negative outcomes include insufficient preventative healthcare and screening of older adults as compared to younger adults, the denial of proven medical interventions based on age, and the exclusion of older adults from clinical drug trials, despite older people being the largest users of approved

drugs (The Alliance for Aging Research, 2003). These negative outcomes also include the under-treatment of older patients, such as misdiagnosis of pain, sexually transmitted diseases, and depression and the over-treatment of older patients, including aggressive care at the end of life and prescribing of psychotropic medications to manage agitation or insomnia (Ouchida & Lachs, 2015). At the institutional level within the healthcare system, ageism may be contributing to the shortage of healthcare professionals who wish to work with older patients, the refusal of some healthcare professionals to accept Medicare reimbursement, and the failure of single disease clinical practice guidelines to meet the complex needs of multi-morbid older patients (Ouchida & Lachs, 2015).

Study Purpose

The purpose of this study is to explore the attitudes of healthcare professionals toward aging and older patients. Specifically, the study will explore the relationship between personal aging anxiety among healthcare professionals and their attitudes to older patients, considering the potentially moderating factors of job role and work setting. Successful completion of this study will lead to a more refined understanding of the attitudes that healthcare professionals hold toward older patients and provide insight into how these are shaped. This will inform the discussion about how to design healthcare workforce education, skill development, and care models that best meet the needs of the growing population of older adults in the United States. The long-term goal is to eradicate the negative impact of ageism in healthcare and thus improve the quality of care delivered to older patients.

Study Significance

This study adds significantly to the body of literature on ageism in healthcare by exploring the attitudes of healthcare professionals to their own aging and toward older patients.

Despite the fact that healthcare professionals are in an influential position to set standards and act as role models for trainee and recently graduated healthcare professionals, they are studied far less often than are health professions students (Liu, While, Norman, & Ye, 2012). Furthermore, personal aging anxiety has rarely been used as an independent variable despite indications that it has an inverse predictive capability with regard to attitudes to older people (Lasher & Falkender, 1993).

This study will also contribute to filling a gap in the literature on ageism in healthcare by exploring the potential moderating effect of the healthcare professional's job role on their attitudes to their own aging and to older patients. This provides the opportunity to include a range of healthcare professionals who have been less frequently studied than physicians and nurses, including occupational therapists, physical therapists, certified nursing aides, and long-term care administrators. The inclusion of work setting as a potential moderating variable on the relationship between personal aging anxiety and attitudes to older patients also enables an exploration of the little studied effect of healthcare unit on the attitudes of healthcare professionals to older patients.

Introduction to Theoretical Framework

Relational ageism theory provides the theoretical framework for this study. Relational ageism theory posits that there is a master cultural narrative of aging that pervades society and culture and that this narrative has a strong biomedical focus of disease, decline, and death (Gendron, Inker, & Welleford, 2017). This biomedical master narrative of aging is influential at multiple levels of society, including the macro or cultural level, the meso level at which organizations operate, and the micro level at which individuals socially interact. Relational ageism theory predicts that healthcare professionals will absorb and internalize the master

cultural narrative of biomedical aging, including its view of aging as a disease and its preoccupation with intervention and curative treatment, as opposed to the maintenance of health and the management of chronic disease states.

Relational ageism theory further predicts that the ageism internalized by healthcare professionals will be enacted through their practice as healthcare providers in the form of age blaming or age shaming. Age blaming occurs when healthcare professionals view or describe older patients as a burden or a problem due to the needs they present. Age shaming occurs when negative attention is called to the age or appearance of age of oneself or an older person, or older people are avoided because of their age or appearance of age. Using relational ageism theory as a guiding framework, this study investigates the relationship between personal aging anxiety (internalized ageism) and attitudes to older patients, particularly age blaming. The potential influence of the meso level factors of work setting and job role will also be explored to discover the extent to which they may amplify the relationship between personal aging anxiety and attitudes to older patients.

Assumptions

A key assumption of this study is that ageism, anchored in a strongly biomedical view of aging, is common in both society and healthcare. This assumption does not mean that all healthcare professionals are expected to be ageist nor does it mean that they do not wish to give good quality care to older patients. Another assumption is that different types of healthcare professionals have been trained and socialized differently such that their job role is likely to influence their attitudes to older patients. It is also assumed that various healthcare work settings and their differing performance pressures are likely to influence attitudes to older patients. Specifically, it is assumed that technology driven units like intensive care, time constrained units

like the emergency department, and units at risk for poor quality care like long-term care facilities will have potential for influencing the attitudes of healthcare professionals to older patients. The study also assumes that healthcare professionals will provide truthful and accurate answers to survey questions.

Delimitations

The survey for this study took place in late September 2017 and was targeted on the staff working in two regions of a mid-sized health system operating across five regions in the Mid-Atlantic. As the focus is on currently qualified healthcare professionals, that is healthcare professionals who hold the appropriate licenses and certificates to operate without supervision, health professions students were not included in the study. The study measured explicit attitudes to personal aging and older patients. It did not measure implicit or unconscious aging biases. While the study measures the attitudes of healthcare professionals, it does not capture their actual behaviors toward older patients nor does it attempt to measure the impact of ageist attitudes on the quality of healthcare received by older patients.

Summary of Data Sources

This study used a cross-sectional survey design to collect primary data via distribution of an online survey. The Research Electronic Data Capture (REDCap) system, available through Virginia Commonwealth University's (VCU's) Center for Clinical and Translational Research, hosted the survey. Online respondents were recruited from a convenience sample of 1,720 healthcare professionals working in two community health networks (regions) of a mid-size, Mid-Atlantic health system. Healthcare professionals are the primary unit of analysis for this study. Survey questions enabled the collection of demographic data about healthcare

professionals and included two validated instruments: The Aging Anxiety Scale (Lasher & Falkender, 1993) and The Geriatric Attitudes Scale (Reuben et al., 1998).

Definition of Terms

The following definitions clarify the meaning of terms as they are used within this study.

- Age blaming**:** An expression of relational ageism where an individual draws attention to, acknowledges, apologizes, or jokes about a perceived deficit at a macro level, such as generalization of an aging population as a crisis or burden (Gendron et al., 2017).
- Age shaming**:** An expression of relational ageism whereby an individual uses language to describe age or an age-related trait as shameful or embarrassing (Gendron et al., 2017).
- Ageism**:** Negative or positive stereotypes, prejudice and/or discrimination against (or to the advantage of) elderly people on the basis of their chronological age or on the basis of a perception of them as being 'old' or 'elderly' whether implicit or explicit and whether expressed on a micro, meso, or macro level (Iverson, Larsen, & Solem, 2009).
- Biomedicalization of aging**:** Biomedicalization represents the reframing of an array of human experiences and human problems in terms of biomedical knowledge and techniques and particularly their ability to ameliorate or solve these experiences and problems (Clarke & Shim, 2011). The biomedical model of aging is one in which aging is conceptualized primarily as disease and deterioration or as a pathological process in need of cure.
- Healthcare professional: Qualified and licensed healthcare practitioners including physicians, residents, physician assistants, nurse practitioners, registered nurses, licensed practical nurses, certified nursing aides, social workers, pharmacists, occupational therapists, physical therapists, licensed nursing home administrators, licensed assisted living facility administrators, and others who provide care for patients in healthcare work settings.

- Job role**:** The type of healthcare profession in which a healthcare professional is currently practicing, such as physician, nurse, social worker, etc.
- Personal aging anxiety**:** A multidimensional construct that is broadly defined as an anxious mental state arising from worry and fears about anticipated changes and losses as a result of the aging process (Lasher & Faulkender, 1993; Watkins, Coates, & Ferroni, 1998).
- Relational ageism: A process or a pathway in which ageism is expressed and perpetuated through positive reinforcement from others or the environment (Gendron et al., 2017).
- Work setting**:** The type of healthcare unit that healthcare professionals provide their services in, such as hospitals, outpatient clinics, long-term care settings, and home care.

Chapter Summary and Overview of Remaining Chapters

Chapter one has described the negative outcomes that flow from ageism in a healthcare setting and the putative origin of ageism in a strongly biomedicalized master cultural narrative of aging. The chapter has also identified the need to explore the relationship between personal aging anxiety, job role, and work setting among healthcare professionals and the influence of these factors on their attitudes to older patients. The remainder of the proposal follows in chapters two and three. Chapter two presents a review of the literature on ageism in healthcare, including a discussion of what is known about the topic, and identification of gaps in the literature that point to the need for the current study. Chapter two also more fully explains the theoretical underpinnings for the study. Chapter three describes the study sample, includes a power analysis, and outlines the study's research design and methodology. The study proposal concludes with references and appendices.

Chapter Two: Literature Review

Chapter Overview

Chapter Two presents and critically reviews the literature on ageism in healthcare, with a specific focus on the attitudes of healthcare professionals toward their own aging and toward older patients. The chapter begins with a brief overview of the demographic trends of the U.S. older population and their healthcare utilization, and trends in the population of healthcare providers with gerontological or geriatrics training. The chapter next discusses the dominant cultural context of aging and healthcare, known as the biomedicalization of aging, which shapes the treatment of older adults within the U.S. healthcare system. The chapter then briefly reviews the literature explicating the construct of ageism using the tripartite model of stereotypes, attitudes (including aging anxiety), and behavior toward older adults, and applies this to the professional setting of healthcare using the theory of relational ageism to explore healthcare professionals' attitudes toward older patients. The research questions and study aims and hypotheses conclude the chapter.

Demographic Trends of the Older U.S. Population and Their Healthcare Utilization

Older adults are a sizeable and growing proportion of the U.S. population. In 2014, one in seven adults in the U.S. was age 65 or older, representing 46.2 million people or 14.5% of the population (Colby & Ortman, 2014). By 2040 it is estimated that the population of older persons in the U.S. will have increased to 82.3 million people, representing one in five (21.7%) of all Americans. The steepest increases are likely to occur in the population age 85 and older, known as the oldest old, which is expected to climb from 6.2 million in 2014 to 14.6 million in 2040.

The projected increase in the oldest old population in the U.S. is significant as these Americans have the highest levels of disability, leading to higher healthcare usage and costs (Wetle, 2008).

The majority of adults age 65 and older have at least one chronic health condition, and as many as 60% live with multiple chronic conditions, including arthritis (49%), heart disease (30%), cancer (24%), diabetes (21%) and hypertension (45%) (Ward, Schiller, & Goodman, 2014; Administration on Aging Administration for Community Living U.S. Department of Health and Human Services, 2015). As a consequence, adults age 65 and older account for close to 26% of all physician visits, 35% of all hospital stays, 34% of all physical therapy patients, and 90% of all nursing home stays (Institute of Medicine, 2008). They average twelve doctor visits per year, with 80% seeing a primary care clinician at least once (Davis, Bond, Howard & Sarkisian, 2011). Twice as many adults age 75 and older (20%) visited a doctor or healthcare professional in the past twelve months compared to adults age 45 to 64 (10%) (Administration on Aging Administration for Community Living U.S. Department of Health and Human Services, 2015).

Trends in the Population of Healthcare Providers Specializing in Older Adults

Concurrent with the increase in the size of the older population, the number of healthcare professionals who choose to specialize in the care of older adults has been declining since at least the turn of the 21st century (Committee on the Future Health Care Workforce for Older Americans, Institute of Medicine, 2008). In 2014 there were just 7,428 certified geriatricians in the U.S., or one geriatrician for every 2, 256 Americans age 75 and older, with the ratio projected to worsen to one geriatrician for every 4,484 Americans age 75 or older by 2030 (Scheinthal, Gross, & Morales-Egizi, 2015). This represents a potential shortfall of 30,000 geriatricians by 2030 (The American Geriatrics Society, 2013). The shortage is even more pronounced for

geriatric psychiatrists, with a ratio of one geriatric psychiatrist for every 11,526 patients age 75 and older in 2014 with projections that this ratio will deteriorate to one geriatric psychiatrist for every 20,448 adults age 75 or older by 2030 (Scheinthal, et al., 2015). Few healthcare professionals choose to specialize in the care of older adults in other disciplines too, including: 4% of social workers; 3% of psychologists; 2.6% of advance practice nurses; and 1% each of registered nurses, physician assistants, and pharmacists (The American Geriatrics Society, 2013). Thus, an increasing older population will confront a low number of health care professionals trained in providing care to them. Older adults will continue to make up a significant proportion of the patient population yet many providers may be unaware of this fact as they decide on the age-range focus of their practice (Helton & Pathman, 2008).

Various authors have explored health professions students and their level of interest in working with older patients, including: medical students (Meiboom, de Vries, Hertogh, Scheele, 2015); nursing students (Eymard & Douglas, 2012); social work students (Chonody & Wang, 2014); and allied health professions students, including occupational therapists and physical therapists (Klein & Liu, 2010; Giles, Paterson, Butler, & Stewart, 2002). Reasons for the lack of interest among healthcare professions students in working with older patients include low pay and lack of prestige of geriatric specialties (Helton & Pathman, 2008; Album & Westin, 2008), distaste for the environments in which some older adults receive care, such as nursing homes (Meiboom et al., 2015; Brown, Nolan, Davies, Nolan, & Keady, 2008), ageist attitudes toward older adults (Higashi et al., 2012), negative attitudes of healthcare professionals to their own aging (Golden, Gammonley, Hunt, Olsen, & Issenberg, 2014), and a preference to work with younger patients who have curable, acute, somatic diseases versus older patients who are chronically ill (Meiboom et al., 2015).

Many healthcare professionals receive little education about aging, and even where education about aging is provided it often has a strong biomedical slant toward aging-related pathologies (Leipzig, Granville, Simpson, Anderson, Sauvigné, & Soriano, 2009). For instance, Krauss and Hulicka (1990) note a pervasive "everything goes downhill" (p. 1132) theme in undergraduate psychology textbooks, a finding echoed by Robinson, Briggs, and O'Neill (2012) who conclude that only 12.5% of the 40 textbooks on geriatrics published in the British Isles portrays a balanced view of aging, with the majority failing to explain that normative psychological development in older age involves both gains and losses. Thus, healthcare professions students miss critical opportunities to learn that aging is highly heterogeneous and involves processes of growth and development, as well as maintenance, and regulation of loss (Alkema & Alley, 2006).

These narrowed educational perspectives on aging presented to many healthcare professions students may then be reinforced through socialization once they join the workforce. (Higashi et al., 2012; Ouchida & Lachs, 2015). The modeling of negative, and sometimes outright prejudicial, behaviors by mentors and other more senior practitioners toward older patients can negatively affect the attitudes of less experienced healthcare professionals toward older patients (Aronson, 2015; Higashi et al., 2012).

The Biomedicalization of Aging

Biomedicalization represents the reframing of an array of natural human experiences as problems that can be ameliorated or solved by the use of biomedical knowledge and techniques (Clarke & Shim, 2011). Aging is a universal human experience to which biomedicalization has extended its influence through the creation of medical interventions that "reshap[e] norms of aging and standard clinical practice" (Kaufman, Shim, & Russ, 2004, p.2) The biomedical model

of aging is one in which aging is conceptualized primarily as disease and deterioration; in other words, aging is a pathological process. The biomedical model of aging defines both how healthcare professions students are trained and how healthcare professionals practice with regard to older patients (Estes & Binney, 1989). Seen through Foucault's "clinical gaze", the aging body is viewed as a clinical problem to be solved or resolved (Foucault in Estes & Binney, 1989, p. 589). Estes and Binney (1989) have extensively explored the concept of the biomedicalization of aging and especially its consequences for healthcare more generally, concluding that it is a "powerful and pervasive process" (p. 587) that has shaped the "institutionalized thought structure" (p. 588) of healthcare.

The biomedical view of aging as a pathology that might somehow be cured or reversed is allied with a trend toward the use of increasingly high technology medical interventions (Estes & Binney, 1989; Clarke, Shim, Mamo, Fosket, & Fishman, 2003; Clarke & Shim, 2011). The expanding availability of high technology healthcare interventions creates an impetus for their use and exacerbates an inherent tension between the goals of caring for patients and curing them. Through the influence of the biomedicalization of aging, clinical interventions become routinized, resulting in the potential for a conflict facing physicians between the goals of curing disease and prolonging life versus minimizing suffering and maximizing quality of life (Akbar & Moss, 2014). From a nursing perspective, there is also a trend toward increasingly emphasizing the health outcomes achieved through use of medical technology, rather than the low-technology process of caring for people (Dragon, 2006).

Ironically, this trend toward the biomedicalization of aging in healthcare has an impact in the opposite direction too, resulting in the potential for "therapeutic nihilism" (Klein & Liu, 2010, p. 157), or an assumption that treatment for older adults is pointless if they cannot be

cured. Thus, taking a narrow, biomedical approach to an older patient may result in either over-treatment or under-treatment, both of which can lead to sub-optimal care.

Lastly, and perhaps most insidiously, the biomedicalization of aging represents a hegemonistic approach to aging which frames how individuals experience their own aging and the aging of others. When an entire society's frame of reference for aging is biomedical, this becomes the dominant cultural narrative for understanding aging. As these views become widespread and normalized, they become reinforced socially through contact with the medical profession, as well as family, friends, and through one's own belief system. This ultimately leads to non-biomedical views of aging becoming "inconceivable" (Estes & Binney, 1989, p. 591). The narrow focus of a biomedical perspective on decline and loss and the widespread cultural normalization of this understanding of aging encourages negative attitudes to aging at both individual and societal levels. This phenomenon is known as ageism.

Ageism

The construct of ageism has undergone continuous exploration and development since it was first introduced in 1969 by Robert Butler, a physician who observed egregiously negative attitudes by his medical colleagues toward older patients (Butler, 2005). Butler (1969) initially defined ageism as "prejudice by one age group toward other age groups" (p. 243). Later Butler expanded, and perhaps politicized, his definition of ageism to "a process of systematic stereotyping and discrimination against people because they are old, just as racism and sexism accomplish this for color and gender" (Butler, 1975 p. 12). In the years since Butler's initial definition of ageism, numerous authors have pointed out the essential difference between ageism and the other 'isms'. Whereas the categories of race and sex are largely immutable, everyone who lives long enough will become old and will therefore be subjected to ageism. Furthermore,

unlike race and sex, age is a factor that will continue to change as we move through the span of our lives (Kagan & Melendez-Torres, 2015). Although Butler's (1969) definition of ageism assumed a negative valence, others have pointed out that ageism may also be positive in valence, with the result that elders are accorded benefits and privileges not granted to other age groups (Palmore, 1999).

Researchers following Butler have sought to develop a more multidimensional understanding of ageism by drawing attention to its dual manifestation as an implicit, or unconscious, behavior and an explicit, or conscious, behavior. Human beings appear to be biologically programmed to use implicit, or unconscious, association to automatically categorize others on the basis of age, sex, and race, (Nelson, 2002; Axt, Ebersole, & Nosek, 2014). This implicit tendency to mentally organize and categorize others is a deep seated human behavior, supporting navigation through a complex world in which there is a survival advantage to making quick judgments about potential threats (Cuddy, 2002). Explicit ageism, on the other hand, occurs when an individual consciously alters their feeling, belief, or behavior in response to another individual or group's perceived chronological age (Levy & Banaji, 2002). Explicit ageism can be seen in instances where an older person is treated differently based on their age; for instance, being the object of over-helping behaviors based on an assumption that they are incompetent or less competent because they are old (Nelson, 2005; Coudin & Alexopoulos, 2010). Iversen, Larsen, and Solem's (2009) extensive review and critique of earlier attempts to explicate the construct of ageism results in what they describe as a "comprehensive" definition of ageism (p.15). These authors define ageism as "negative or positive stereotypes, prejudice and/or discrimination against (or to the advantage of) elderly people on the basis of their chronological age or on the basis of a perception of them as being 'old' or 'elderly'".

Levels of Ageism

Attempts to explain and further define the construct of ageism have also led to definitions that include the levels at which it operates. McGowan's (1996) definition of ageism characterizes it as a "systematic devaluation" (p. 71) of older individuals operating at two levels: the interpersonal, or micro, level and the institutional, or macro, level. Hagestad and Uhlenberg (2005) also suggest a third, meso level of ageism that characterizes and reflects the social efforts that are needed to "make and maintain" ageism (p. 17). The meso level links the micro level to the macro level, directing attention to the social space in which ageism is created, reinforced, and perpetuated, and enabling the development of theories that can be tested and refined in order to develop our understanding of how ageism is perpetuated (Hagestad & Uhlenberg, 2005).

Iverson et al. (2009) also conceive of ageism as expressed on a "micro, meso, or macro level" (Iverson et al., 2009, p.15). Within macro ageism, Iverson et al. (2009) also distinguish explicitly between "cultural ageism", artifacts of which are seen in language, literature, and mass media, and "institutional ageism" which is more specifically focused on behaviors within organizations (Iverson et al., 2009, p.16). They also create a conceptual framework to guide the operationalization of the construct of ageism, including four dimensions and 20 variants of ageism within this framework (Table 1). Despite its impressive inclusivity, however, the authors fail to capture the dimensions of self-directed (or internalized) versus other directed (or externalized) ageism (Brunton & Scott, 2015) and ambivalent ageism, in which feelings of warmth toward older adults are combined with beliefs about their incompetence (Cuddy & Fiske, 2002). Nevertheless, Iverson and colleagues' (2009) conceptual map is helpful in enabling a clear focus on the specific aspects of ageism being addressed in this study, which is micro and

Table 1

Iversen, Larsen and Solem's Variants of Ageism

	Micro level			Meso level	Macro level
Components	Cognitive (stereotypes)	Affective (prejudice)	Behavioral (discrimination)	Discrimination in social networks	Institutional and cultural discrimination
Explicit/ Negative		**X**		**X**	
Explicit/ Positive					
Implicit/ Negative		**X**		**X**	
Implicit/ Positive					

meso level negative attitudes among healthcare professionals toward older patients as highlighted in the gray boxes in Table 1.

Tripartite Model of Ageism: Stereotypes, Attitudes, Behavior

Eagly and Chaikin's (1993) representation of ageism using the lens of psychosocial attitude theory, and specifically the classic tripartite model of attitudes (Rosenberg & Hovland, 1960), is also evident in the definition by Iversen and colleagues (2009). This approach, which has subsequently been adopted by many other ageism theorists (Kite & Wagner, 2002; Nelson, 2002; Schiller Schigelone, 2003; Palmore, Branch, & Harris, 2005), defines ageism as a composite of three interconnecting components: age stereotypes; attitudes toward aging (including internal aging anxiety and attitudes toward older persons), and ageist behaviors. The following sections explore each of these components.

Age stereotypes. Stereotypes of older adults can be positive, negative, or ambivalent, although negative stereotypes outweigh positive stereotypes (Kotter-Grühn, & Hess, 2012). Negative stereotypes of older people typically characterize them as grumpy, senile, unable to

change or to learn new skills and information, and physically unattractive, while positive stereotypes of older adults tend to describe them as kind, sweet, and wise (Cuddy & Fiske, 2002). Cuddy and Fiske's (2002) exploration of age stereotypes confirmed that they are typically multidimensional, forming along the two axes of warmth and competence. Stereotypes of older adults consistently form in the high warmth and low competence quadrant, reflecting ambivalence about the group identity of older adults. This ambivalent stereotype of older adults has been described as "doddering but dear" (Cuddy & Fiske, 2002, p. 3).

Attitudes toward aging and personal aging anxiety. Attitudes toward aging encompass both attitudes to others, and attitudes to one's own aging, known as personal aging anxiety. Personal aging anxiety is a multidimensional construct that is broadly defined as an anxious mental state arising from worry and fears about anticipated changes and losses as a result of the aging process (Lasher & Faulkender, 1993; Watkins, Coates, & Ferroni, 1998). Aging anxiety may derive from both negative misunderstandings of normal aging and legitimate concerns about changes that come with aging (Yan, Silverstein, & Wilber, 2011). To the extent that aging anxiety derives from negative misunderstandings of normal aging, it represents ageism that has been internalized, resulting in negative thoughts and feelings regarding one's own aging and the aging process as personally experienced, especially but not exclusively with regard to the physical aspect of growing older (Allan and Johnson, 2009; Boswell, 2012; Allan et al, 2014) and appearing older (Chonody & Teater, 2016).

Personal aging anxiety has been correlated with harmful health outcomes for self and others. Harmful self-directed outcomes include increased risk for chronic disease (Allen, 2016), increased dependency (Coudin & Alexopolous, 2010), perceived ill health (Ramirez and Palacios-Espinosa, 2016), reduced recovery from illness (Levy, Slade, May & Caracciolo, 2006),

and decreased longevity (Levy & Myers, 2005; Levy, Slade, Kunkel, & Kasel, 2002). Harmful other-directed outcomes are suggested by Lasher and Faulkender (1993) who propose that personal aging anxiety mediates not only adjustment to one's own aging but also one's attitudes and behaviors toward older adults, potentially impacting their willingness to interact with others who are old. Aging anxiety has also been shown to inhibit an individual's ability to empathize and express compassion for older adults, possibly due to the creation of psychological distance as an ego protective measure (Bergman & Bodner, 2015). Finally, personal aging anxiety seems to mediate the relationship between job satisfaction and career commitment among those working with older adults (Gendron, Welleford, Pelco, & Myers, 2014). The inverse correlation between personal aging anxiety and job satisfaction may have implications for the low interest among healthcare professionals in working with the older population.

Ageist behaviors. Behaviors toward older adults vary in valence, as do stereotypes, with positive, negative and ambivalent behaviors that can be categorized as forms of discrimination. Bytheway (1995) and Palmore (1999) point to significant examples of positive age discrimination, such as preferential social policies like social security and preferential consumer policies like senior discounts. In a healthcare context, positive age discrimination can be seen in the Medicare program which affords adults age 65 and older federally mandated health insurance on the basis of their age alone, a benefit not available to most younger Americans. Negative age discrimination may manifest in disadvantageous and unfair treatment of older adults in the workplace, for example in hiring, pay, performance evaluation, and promotion decisions and actions (Stypinska & Turek, 2017). In a healthcare setting, negative age discrimination may be directed against older healthcare employees, including assumptions that they are not as capable of doing their jobs well as they age (Kagan & Melendez-Torres, 2015; Durning, Artino,

Holmboe, Beckman, van der Vleuten, & Schuwirth, 2010). It can also be directed toward older patients, for example in the use of age-based rationing of healthcare resources which excludes older adults on the simple basis of their age (Williams, 2000), and the exclusion of older adults from many clinical drug trials, despite the fact that they are the main consumers of approved drugs (The Alliance for Aging Research, 2003).

Ambivalent ageism is characterized by the belief that older adults are simultaneously warm and incompetent (Cuddy & Fiske, 2002) leading to a form of discriminatory behavior known as the "pitying positive" approach (Tornstam, 2006, p.54). Ambivalent ageism is seen in benevolent yet paternalistic behavior toward older adults needing care, including over-helping them or treating them as if they were children. Although motivated by a positive concern for older individuals because of their perceived infirmities and helplessness, nonetheless these attitudes have been shown to do harm in a healthcare setting in terms of creating and increasing dependency among older adults (Coudin & Alexopolous, 2010).

The next sections explore these three interconnecting components of the tripartite model of ageism - stereotypes, attitudes, and behaviors - in the professional setting of healthcare.

Application of the Tripartite Model of Ageism to Healthcare

Stereotypes of older patients. Stereotypes of older patients appear to be distinct from stereotypes of older people in general, being influenced by the type of healthcare encounter and the organizational environment in which the encounter takes place (Samra et al., 2015). Negative stereotypes of older patients appear to be more prevalent than positive ones, as is the case for stereotypes of older adults in general (Kotter-Grühn, & Hess, 2012). Table 2 provides a summary of the literature that describes both positive and negative stereotypes of older patients held by physicians and nurses.

Table 2

Literature Review of Stereotypes of Older Patients

Positive Stereotypes of Older Patients	**Negative Stereotypes of Older Patients**
Among Physicians	
Respectful, polite, trusting, and grateful (Samra et al., 2015)	Less able to make informed decisions/choices, less able to learn new information, or judge the quality and severity of their symptoms; less valuable information to offer; and less intelligent and informed. (Gunderson et al, 2005 in Meisner, 2012)
Appreciative and more pleasant to be with and to listen to than younger patients (Helton & Pathman, 2008)	Incurable and therefore not worth treating (Higashi et al., 2012; Meisner, 2012; Schiller-Schigelone, 2003)
More deferential to doctors as compared with younger patients (Higashi et al., 2012)	Boring and frustrating to treat (Higashi et al., 2012)
	Do not help clinicians meet treatment goals, professional goals, or institutional goals (Higashi et al., 2012; Skirbekk & Nordvedt, 2014)
Among Nurses	
More decisive, friendly and organized than younger people (Gething, McKee, Goff, Churchward, & Matthews, 2002)	Physically and cognitively impaired as a general rule; dependent, unhealthy, and inflexible; use resources that could otherwise go to more deserving patients (Gething et al., 2002)
More exciting, challenging, and valuable as an opportunity for nurses to be responsible for providing good care (Nordam, Torjuul, & SØrlie, 2005)	Lacking in autonomy and lonely (Schroyen, Missotten, Jerusalem, Gilles, & Adam, 2015)
	Needy and burdensome (Higgins, Slater, Van Der Riet, & Peek, 2007)
	Inefficient and stressful additions to nursing workloads (Deasey, Kable, & Jeong, 2014)
	A burden to nurses and an obstacle to the more important work of caring for younger adults (Dahlke & Phinney, 2008)

Attitudes of healthcare professionals toward older patients. The attitudes of healthcare professionals toward older patients have been identified in the literature as evidence of ageism in healthcare. Studies have typically focused on physicians (Meisner, 2012) and nurses (Liu, Norman, & While, 2013; Liu, Norman, & While, 2015), although there are a small number of studies looking at other professionals, including social workers (Allen, Cherry, & Palmore, 2009), mental health therapists (Tomko & Munley, 2013), occupational therapists (Klein & Liu, 2010) and physical therapists (Blackwood & Sweet, 2015). The following sections explore the evidence about attitudes of various healthcare professionals toward older patients.

Physicians' attitudes toward older patients. Meisner's (2012) summative review of the literature on the attitudes of physicians to aging and providing care to older patients concludes that their attitudes are "complex and mixed" (p. 62). Although negative attitudes toward older patients outweigh positive ones, physicians have been shown to hold both, with positive attitudes typically related to personal attributes of older adults, and negative attitudes more often related to their health and functional ability. This ambivalence toward older patients also emerged clearly from an ethnographic study by Higashi and colleagues (2012), which found that most medical residents felt some combination of frustration and warmth toward older patients. There is some evidence that physicians' attitudes may vary across medical specialties, although not in a consistent manner or direction. For instance, surgeons have been found to have more negative attitudes toward older patients in general as compared with other medical specialties, but more positive attitudes to therapeutic potential with regard to older adults as compared with other medical specialties (Krain, Fitzgerald, Halter, & Williams, 2007).

Several qualitative studies outside the U.S. have explored the attitudes of hospital physicians and physicians-in-training toward older adults, revealing a rich and complex picture.

Samra and colleagues' (2015) qualitative study of U.K. hospital physicians at varying levels of seniority found that attitudes of physicians were complex and multidimensional, involving a mix of positive and negative emotions. Positive emotions expressed by physicians included a sense of satisfaction at helping older patients and their families, the life-affirming feeling of having helped another person have a good death, and a sense of social justice from working in an under-acknowledged yet important specialty area. Samra and colleagues (2015) also noted that negative emotions toward older patients were more likely to be expressed by less experienced doctors, who typically reported feeling sadness, anxiety, fear, guilt and self-doubt in caring for frail or complex older patients. A small number of quantitative studies have found that physicians' attitudes toward older patients tend to improve over time, with attitudes ranging from neutral to positive (Liu, While, Norman, & Ye, 2012).

Nurses' attitudes toward older patients. Nurses form the largest occupational group in healthcare and have been the subject of numerous studies of ageism (Liu et al., 2015). Despite some debate in the literature about whether ageism among nurses can be said to be a concern, given the methodological limitations of many studies (Wilson, Nam, Murphy, Victorino, Gondim, & Low, 2017), it has been argued that ageism is embedded in the professional culture of nurses in the form of a preference for working with younger patients (Kagan and Melendez-Torres, 2015; Dahlke & Phinney, 2008). One study found that nurses were "strikingly" (Wells et al., 2004, p. 11) more likely than other health professionals to agree that working with older adults is associated with low professional esteem and, as with physicians, concerns have been expressed about the comparative unpopularity of specializing in the care of older patients (Brown, Nolan, Davies, Nolan, & Keady, 2008). Studies of nurses' attitudes to older patients have, however, returned mixed results, including positive (Liu, While, Norman, & Ye, 2015;

Gallagher, Bennett, & Halford, 2005; Gunderson, Tomkowiak, Menachemi, & Brooks, 2005), neutral (Gething, Fethney, McKee, Goff, Churchward, & Matthews, 2002; Hweidi, & Al-Hassan, 2005) and negative (Kearney, Miller, Paul, & Smith, 2000) attitudes.

Attitudes of other healthcare professionals toward older patients. Studies of attitudes toward older patients among other types of healthcare professionals are much less common than among physicians and nurses (Liu et al., 2012). Attitudes in the disciplines of social work, occupational therapy and physical therapy have been examined.

Allen, Cherry, and Palmore (2009) examined ageist behaviors among practicing social workers and social work students in nursing homes and the mental health system. Using an instrument designed to measure self-reports of positive and negative ageism, they found that participants self-reported more positive than negative ageist behaviors, including giving older clients preferential treatment due to their age. These behaviors might be interpreted as a "pitying positive" form of ageism (Tornstam, 2006, p. 54). In a study of 364 counseling psychologists, Tomko and Munley (2013) found overall positive attitudes toward older clients, although they noted that the relatively small percentage of psychologists who choose to serve older adults is likely an expression of ageism at a societal level.

Among allied health professionals, Klein and Liu (2010) explored the attitudes of 16 gerontological occupational therapists toward their older clients in a qualitative study. Their findings included perceptions among occupational therapists that their work with older adults was devalued compared with working with younger clients and that society in general was ageist, although they believed they were not. Klein and Liu (2010) also found that the occupational therapists participating in the study displayed unexamined ageism, including expressing disappointment when older clients did not regain former function, and expressing

strong support for assisting clients to attain the goal of independence as a marker of professional efficacy and achievement. Blackwood and Sweet's (2015) qualitative case study of 15 first year physical therapy graduate students revealed their beliefs that healthcare professionals generally saw older clients as frail, difficult to work with, and that it was inappropriate to push them to work harder at their therapy. While these students rated their own interactions with older adults as more positive than negative, they rated observed interactions of other clinicians with older adult clients as more negative than positive, including negative verbal and non-verbal behavior when working with or talking about working with older clients (Blackwood & Sweet, 2015).

Attitudes of healthcare professionals toward their own aging. The attitudes of healthcare professionals toward their own aging is an important consideration in any discussion of ageism, because healthcare professionals are exposed to the same negative societal messaging about aging as everyone else (Dobbs, Eckert, Rubinstein, Keimig, Clark, Frankowski & Zimmerman, 2008; Kane & Kane, 2005). Furthermore, there is some evidence that nurses with lower personal aging anxiety have more positive attitudes toward older people in general, and also toward working with older patients (Liu et al., 2015) and so it is important to understand the possible connections between personal aging anxiety and attitudes to older patients.

There are few studies examining personal aging anxiety among healthcare professionals but those that do seem to indicate that exposure to vulnerable older adults may be linked with increased personal aging anxiety (Kearney et al., 2000; Dick, 2014). Wells and colleagues (2004) found that nurses working in Australia, the United Kingdom, and Sweden expressed both negative and positive views about their own aging, with negative views predominating, particularly with regard to fears of frailty. Findings by Koder and Helmes (2008) that psychologists who spent the majority of their clinical time in contact with older adults reported

higher aging anxiety raises the question of whether negative stereotypes are strengthened when exposure to a heterogeneous age group is restricted to a relatively homogeneous subset who are vulnerable and dependent. Koukouli, Pattakou-Parasyri, and Kalaitzaki (2013) similarly found that healthcare professionals with experience of working with people with dementia had higher personal aging anxiety than healthcare professionals who did not have such experience and surmised that the exposure to older people with high levels of disability and dependence might be the reason.

Ageist behaviors in healthcare. Almost one in five adults over age 50 reports experiencing age discrimination by a healthcare professional, with 12.6% experiencing discrimination infrequently and 5.9% frequently (Rogers, Thrasher, Miao, Boscardin, & Smith, 2015). Rogers and colleagues (2015) also found that almost one third of participants (29%) reporting frequent healthcare discrimination developed new or worsened disability over 4 years, compared to 16.8% of those who infrequently and 14.7% of those who never experienced healthcare discrimination. This suggests a potential relationship between patient perceptions of age discrimination and health outcomes, making ageism in healthcare a cause for concern. In a recent qualitative study in Norway, physicians and nurses admitted to treating patients differently based on their age, with more time and attention devoted to younger, acutely ill patients for whom they felt they could make a difference, rather than older, more chronically ill patients who might not benefit long-term (Skirbekk & Nortvedt, 2014). These reports of age discrimination in healthcare encounters by both patients and healthcare professionals is underpinned by a body of research that extends over more than four decades, to which the discussion now turns.

Grant's (1996) review of literature on ageism in healthcare from 1975 to 1993 identifies the tendency of physicians to ascribe treatable health conditions to age rather than correctly

diagnosing and treating these conditions and highlights the link between poor quality care and ageist attitudes. The Alliance for Aging Research's (2003) review of healthcare research between 1993 and 2003 concludes that "healthcare delivery in the U.S. is flawed by ageism" (p.14), citing ageism in the insufficient preventative healthcare and screening of older adults as compared to younger people, the denial of proven medical interventions based on age, and the exclusion of older people from clinical drug trials, despite older people being the largest users of approved drugs. Ouchida and Lachs (2015) echo these findings, drawing primarily from research over the period 2000 to 2015 that identifies manifestations of ageism including: 1) the under-treatment of older adults, including misdiagnosis of pain, sexually transmitted diseases, and depression; 2) the over-treatment of older adults, including aggressive care at the end of life, the placement of feeding tubes in individuals with end stage dementia, and prescribing of benzodiazepines to manage agitation or insomnia; 3) ageist communications during medical encounters with older patients, including use of elderspeak, or exaggerated tone and volume, failing to speak directly with the patient or speaking about them to others while in front of them; 4) internalized ageism among older patients, including incorrect beliefs that pain and depression are to be expected with aging and are therefore not worth treating; and 5) ageism at the institutional level within the healthcare system, including the shortage of healthcare professionals who wish to work with older patients, the refusal of some healthcare professionals to accept Medicare reimbursement, the failure of single disease clinical practice guidelines to meet the complex needs of multi-morbid older patients, and the consistent exclusion of older individuals from clinical drug trials.

Having reviewed the tripartite model of ageism and its application to the professional setting of healthcare, the next section uses the theory of relational ageism to further explore attitudes to aging and older patients among healthcare professionals.

The Theory of Relational Ageism

Relational ageism is a theory that proposes a dynamic process in which a cycle of ageism is perpetuated and socially reinforced through the absorption and internalization of negative societal messaging about aging, known as the master cultural narrative of aging. Once absorbed, ageism is then transmitted to and reinforced by other individuals in everyday interactions and exchanges in an attempt to seek social validation in a youth focused culture (Gendron, Inker, & Welleford, 2017). Figure 1 provides a conceptual map of the process of relational ageism. Relational ageism theory draws on earlier theoretical developments by de Medeiros (2005) in respect of the cultural construction, narration, and interpretation of old age. Master cultural narratives are "stories (or story fragments) 'told' by a culture to communicate the values, expectations and attitudes of that culture" (de Medeiros, 2005, p. 2). The cultural narratives about aging are strongly influenced by the biomedical view of loss, decline, and disease; the cultural stories that are told and shared about aging are largely negative, with assumptions that aging and being old is a bad and undesirable thing. This is reflected in the numerous negative stereotypes of older people that significantly outweigh positive stereotypes (Kotter-Grühn & Hess, 2012).

The theory of relational ageism posits that absorption of the negative master cultural narrative of aging by individuals leads them to internalize ageist beliefs and attitudes and then to transmit these to others who then may reinforce them through positive feedback. These individually agentic expressions of ageism emerge in the form of ageist stereotypes, attitudes, and behaviors directed both toward the aging self, and toward older adults, either as specific individuals or as a group. Expressions of ageism directed toward older people as a group can

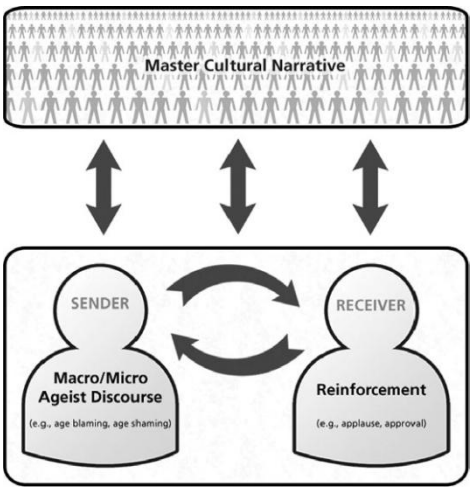

Figure 1. Relational Ageism Theory (Gendron et al., 2017)

occur in the form of age blaming or age shaming. Age blaming is commonly seen in attitudes and statements that blame older adults for presenting burdens and problems to society, such as framing the increasing numbers of older adults in the population as a crisis or a natural disaster ('silver tsunami'). Age shaming is evident in attitudes or statements that shame older adults for their age or appearance of age, such as calling an older adult "young man" or "young lady" in an attempt to deny their age and equate their appearance with the more socially valued attribute of youth.

Application of the Theory of Relational Ageism to Healthcare

The theory of relational ageism (Gendron et al., 2017) predicts that individuals in society will absorb the master cultural narrative of aging and that they will internalize its defining biomedical messaging that aging is synonymous with disease and decline. This biomedical view of aging is strongly shaped by the dominant values of intervention and curative treatment, as opposed to the maintenance of health and the management of chronic disease states which have been shown to be common among older adults (Ward, Schiller, & Goodman, 2014;

Administration on Aging Administration for Community Living U.S. Department of Health and Human Services, 2015). This biomedical narrative of aging and healthcare shapes the culture in which healthcare providers are trained and in which they practice as professionals. Thus, it is logical to consider how the relationships predicted by the theory of relational ageism might apply to healthcare professionals who treat older patients. As seen in Figure 2, relational ageism theory predicts that healthcare professionals will absorb the biomedical master cultural narrative of aging as disease and decline just like any other member of society but also because they are trained and socialized within a biomedical model of healthcare. Absorption of this negative cultural messaging about aging is predicted to result in internalized personal aging anxiety which, in turn, is predicted to influence healthcare professionals' attitudes to older patients at the micro (individual) level, with higher levels of personal aging anxiety relating to more negative attitudes toward older patients. More specifically, the expression of these negative attitudes toward older patients may take the form of age blaming, in which older patients are seen as problematic or burdensome to healthcare professionals or the healthcare system, or age shaming, in which older patients are avoided or stigmatized because they are seen as burdensome or problematic.

Figure 2 also depicts the job role and work setting of healthcare professionals as meso level variables that may be influencing the attitudes of healthcare professionals toward older patients. This is a logical supposition, given that healthcare professionals are socialized according to the norms and rules of their particular profession (in other words, their job role) (Clark, 1997). This socialization constitutes a microcosm of the master cultural narrative and it is therefore conceivable that the norms and rules of different healthcare professions differ with regard to the treatment of older patients, particularly with regard to an emphasis on curing versus

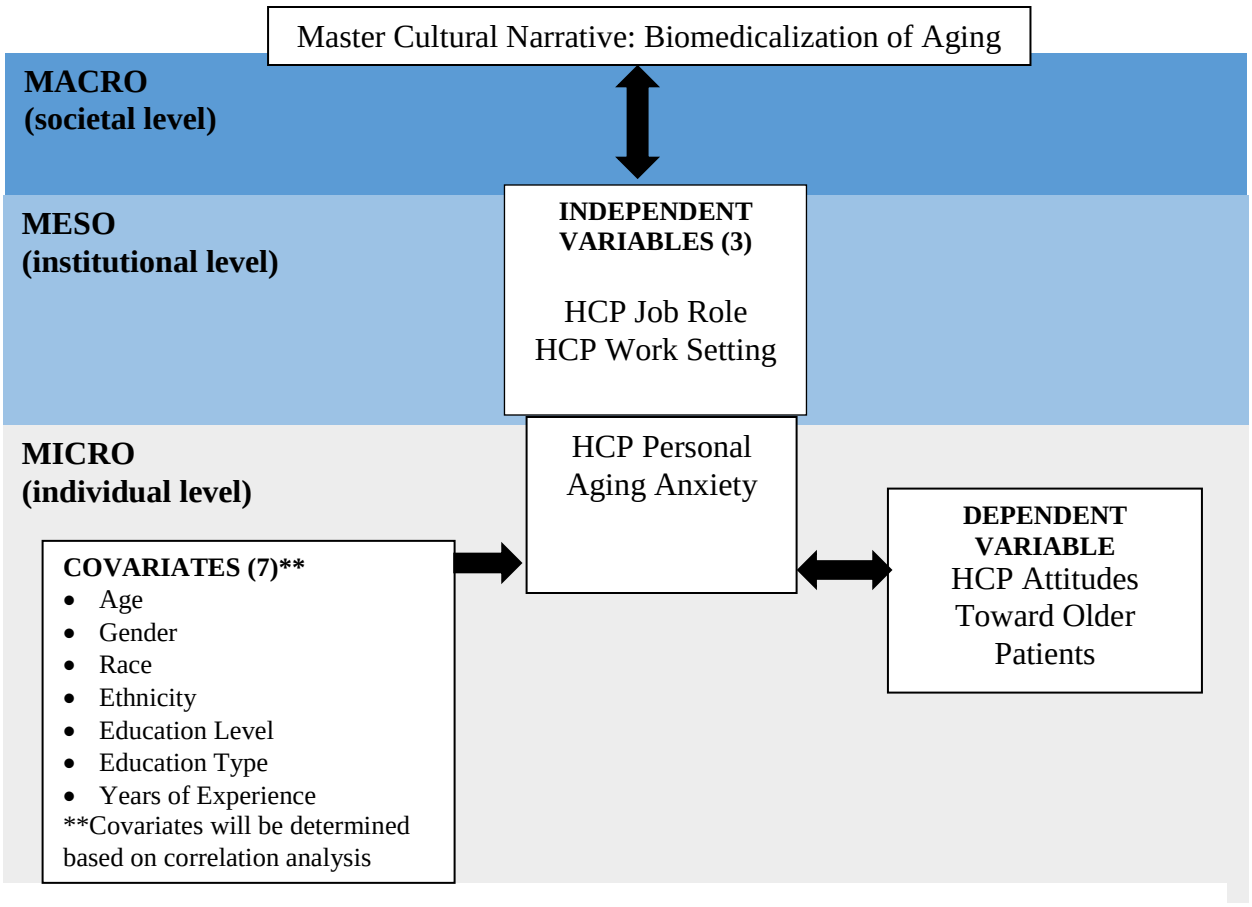

Figure 2. Relational ageism in the professional setting of healthcare

caring for them (Taylor, 2011). It is also reasonable to consider the relationship of work setting and the attitudes of healthcare professionals to older patients, given that the setting may result in the formation of sub cultures that create or reinforce cultural narratives about working with older patients. For instance, older patients with complex needs that are not easily met by existing care models that are not designed to account for complexity may be the subject of age blaming by healthcare professionals who experience caring for them as a burden. The network of relationships between aging anxiety, job role, work setting, and attitudes to older patients are explored in the following sections.

Personal aging anxiety and attitudes toward older patients. Relational ageism theory posits that ageism is internalized through absorption of the master cultural narrative of aging and is subsequently transmitted to others through age blaming and age shaming as an ego-protective strategy for individuals who seek validation in a youth-focused culture (Gendron et al., 2017). Thus, healthcare professionals with greater levels of personal aging anxiety, in other words those who have greater internalized ageism, may be expected to hold more negative views of older patients, including holding more negative stereotypes and misconceptions (Liu, Norman, & While, 2015; Gething et al., 2002). Liu and colleagues' (2015) study is one of a handful that has examined personal aging anxiety among healthcare professionals. They found that nurses with less anxiety about their own aging demonstrated more positive attitudes toward older people and a greater desire to work with them. Only one study was found that compared attitudes toward aging among different types of healthcare professionals; this study only considered personal aging anxiety and knowledge of aging, finding that nurses had higher aging anxiety than physicians (Wells, Foreman, Gething, & Petralia, 2004).

Job role and attitudes toward older patients. Higashi and colleague's (2012) ethnographic study of medical residents revealed what can be characterized as age blaming among physicians in training, in that some medical residents held a negative view of older patients because they primarily offered opportunities for "low-level medical maintenance" (p. 479) rather than opportunities to cure. One resident, making reference to treating older patients, said that they "didn't go to medical school for four years to do this" (Higashi et al., 2012, p.479). Age shaming, in the form of verbal stigmatization of older individuals based on their cognitive and physical impairments, has been found among healthcare professionals working in long-term care (Dobbs et al., 2008; Zimmerman et al., 2014). Age shaming by nurses in acute care has also

been observed in the form of delaying responses to and ignoring older patients who are considered burdensome or difficult (Higgins et al., 2007).

Few studies exist that compare the attitudes of different types of healthcare professionals toward older patients (Wells et al., 2004; Kearney et al., 2000). While some evidence suggests that nurses have more positive attitudes toward working with older patients than physicians do (Liu, Norman, & While, 2013), other studies have found that nurses' attitudes, unlike those of physicians, have become more negative toward older patients over the past 15 years.

Work setting and attitudes toward older patients. Viewing older patients through a lens of biomedical decline may create the circumstances in which they are thought of or seen as inherently challenging to the system of providing healthcare. This may, in turn, result in age blaming of patients for being a burden on healthcare providers when the actual cause of the distress is the inappropriateness or the inadequacy of the resources available to treat those patients (Ekdahl, Hellström, Andersson, & Friedrichsen, 2012; Liu et al., 2015). Two critical resources available in health care are technology and time.

High technology working settings. Settings with very high-technology or high intensity care may be particularly prone to creating the conditions for age blaming. This is because their focus is on intervening to cure rather than to provide a more on-going kind of care, and older patients may not present physicians with as many opportunities to cure. The intensive care unit (ICU) is the epitome of such high-technology, high intensity care in a hospital setting. In a retrospective analysis of ICU records, Lojun, Sauper, Medow, Long, Mark, and Barzilay (2010) found a distinct age bias with regard to Do Not-Resuscitate (DNR) status, such patients over age 70 (OR=3.72) were more likely to be assigned DNR status by staff in the absence of information about their wishes. Brandberg, Blomqvist, and Jirwe (2013) found that patients older than 80

years in the ICU received fewer life-sustaining treatments compared to patients aged 65-79 despite adjusting for comorbidities and severity of illness, and that this appeared to contribute to higher mortality among this oldest age group. Such outcomes could be the result of stereotyping based on the patient's age, rather than on a more nuanced appreciation of their entire situation, including their treatment goals and their functional status.

Time constrained work settings. It has been argued that as time pressures increase on physicians and they have less time to spend with each patient, discrimination against older patients is likely to rise due to negative stereotyping (Levy & Banaji, 2002). Meisner (2012) points to numerous studies of physicians that cite lack of time to meet the needs of older patients as a contributor to negative attitudes about their care. Samra and colleagues (2015) found that negative attitudes toward older patients tended to relate more to perceived shortcomings in the organization of care within the hospital, including time constraints, than to characteristics of the older patient themselves. In a qualitative study of shared decision making among 29 physicians in three Swedish hospitals, Ekdahl, Hellstrom, Andersson, and Friedrichsen (2012) similarly found that physicians generally experienced frustration in treating older patients with multiple comorbidities, due to a lack of time to properly meet their needs.

Such time pressures are perhaps nowhere more evident than in the emergency department. Deasey, Kable, and Jeong's (2014) review of literature between 2004 and 2012 on the attitudes of emergency department nurses to older patients reveals several factors influencing their attitudes, including: 1) questions about the legitimacy of older adults presenting in the emergency department with non-acute needs, 2) having to care for older patients who are no longer acutely ill but remain hospitalized in an acute area, and 3) perceptions that emergency department presentations by nursing home residents are inefficient and stressful additions to staff

workloads. The last of the three findings presents a clear example of age blaming of older patients by healthcare professionals.

Work settings associated with impoverished environments. Brown, Nolan, Davies, Nolan, and Keady's (2008) longitudinal investigation of the attitudes of nursing students to older patients also considered the influence of work setting in long-term care. They concluded that negative attitudes toward older patients may develop during training largely as a result of the experience of "impoverished" clinical environments in which standards of care are poor and observed attitudes of healthcare professionals toward older patients are negative, for instance in some long-term care settings such as nursing homes (Brown et al., 2008, p.89). However, it may also be the case that even in such environments, healthcare professionals have a positive view of older adults as evidenced by demonstrations of affection for them (Ball, Lepore, Perkins, Hollingsworth & Sweatman, 2009).

Other work settings. Only one study was found that looked at the relationship between work setting and attitudes to older patients (Liu et al., 2015). Findings included that nurses working in mental health, primary care, and pediatrics were less likely to report liking working with older patients as compared with nurses who specialized in geriatric care.

The intersection between personal aging anxiety, job role, and work setting and attitudes to older patients. It is inevitably the case that healthcare professionals will come into contact with older patients who are ill, frail, and living with cognitive and/or physical impairments. Such contact may reinforce negative stereotypes of older adults because it seemingly provides confirmatory evidence of the biomedical narrative that older people are frail, vulnerable, and dependent (Reyna, Ferrari, & Goodwin, 2007; Kearney, Miller, Paul, & Smith, 2000). Whereas optimal contact between groups who feel distrust of and prejudice toward each

other has been shown to reduce prejudice (Pettigrew, 2016), it is possible that the type of exposure to older adults that many healthcare professionals have may actually increase personal aging anxiety. In an Australian study, the setting in which nurses worked emerged as the most important variable that differentiated their level of anxiety about their own aging, with working in a residential setting being associated with higher overall personal aging anxiety and higher anxiety about tedium and losses in later life (Wells et al., 2004). Wells and colleagues (2004) found that nurses working in residential care expressed higher personal aging anxiety, and especially a fear of frailty, than other health professionals, including physicians and direct care staff working in the same setting. Koder and Helmes (2008) also found a positive correlation between psychologists practicing specifically with older adults and level of personal aging anxiety, leading them to suggest that their exposure to vulnerable older clients might be a factor.

Demographic variables. Studies of the attitudes of healthcare professionals toward older patients have also tested the predictive capacity of a range of socio-demographic variables, although results have generally been inconsistent and therefore inconclusive. These results are now briefly reviewed.

Gender. Although some studies have found that gender does not predict attitudes to older patients (Furlan & Fehlings, 2009; Gallagher et al., 2006; Gething et al., 2002; Kearney et al., 2000), at least four studies reach the opposite conclusion, but with inconsistent results as to how gender makes a difference. Two of these studies have found that male healthcare professionals have more positive attitudes to older patients (Tomko & Munley, 2013; Hweidi & Al-Hassan, 2005) while another two have found that female healthcare professionals have more positive attitudes to older patients (Leung et al., 2011; Soderhamn, Lindencrona, & Gustavsson, 2001).

Thus, the evidence does not present a clear understanding of the influence of gender on the attitudes of healthcare professionals to older patients.

Age. While greater age of the healthcare professional has been correlated with a more positive attitude to older patients in four studies of varying types of healthcare professionals (Koukoulis et al., 2013; Schroyen et al., 2015; Liu et al., 2015; Gallagher et al., 2006), eight studies failed to find this connection (Leung et al., 2011; Myers et al., 2009; Furlan & Fehlings, 2009; Furlan et al., 2009; Hweidi & Al-Hassan, 2005; Gething et al., 2002; Kearney et al., 2000; Soderhamn et al., 2001). This evidence does not provide a definitive understanding of age as a predictive variable regarding healthcare professionals' attitudes to older patients.

Race and ethnicity. Race or ethnicity have largely been used to describe study samples rather than as predictors. The two studies of healthcare professionals' attitudes to older patients that did explore the correlation between race and attitudes to older people returned conflicting results, with one concluding it was not a significant predictor (Gething et al., 2002) and one concluding that it was (Liu et al., 2015), although not in the direction the researchers expected. The researchers' hypothesis that non-white nurses would be more likely to have positive attitudes to older patients due to being more likely to be living with an older relative at home was not borne out (Liu et al., 2015). This limited evidence on race and ethnicity does not offer clarity on the predictive value of race regarding healthcare professionals' attitudes to older patients.

Level and type of education. Three studies have found that higher levels of education among healthcare professionals are correlated with more positive attitudes to older patients (Furlan et al., 2009, Gallagher et al., 2006; Mellor, Chew, & Greenhill, 2007) while two studies have reached the opposite conclusion (Gething et al., 2002; Hweidi & Al-Hassan, 2005). Only one study of healthcare professionals could be identified in which gerontological education was

tested as a predictor of attitudes to older patients, with the finding that it was a statistically significant but weak predictor of positive attitudes (Wells et al., 2004). Thus, there is mixed evidence as to the importance of level and type of education regarding the attitudes of healthcare professionals to older patients.

Years of experience. The influence of years of experience in one's healthcare profession has also been considered by a number of studies, with five studies failing to identify a correlation between this variable and attitudes to older patients (Furlan & Fehlings, 2009; Furlan et al, 2009; Kearney et al, 2000; Leung et al., 2011; Myers et al., 2009) and six studies finding a correlation between years of experience and attitudes to older patients (Liu et al., 2015; Samra et al., 2015; Liu et al., 2012; Lee, Reuen, & Ferrell, 2005; Gallagher et al., 2006; Hweidi & Al-Hassan, 2005). While one of these studies detected a worsening of attitudes among geriatrics fellows over the period of one year, which the authors concluded might reflect a "dampened enthusiasm when faced with the realities of providing medical care to predominately frail older persons (Lee et al., 2005, p. 493), other studies have reached the opposite conclusion. For instance, Samra and colleagues (2015) found that physicians with greater experience had more positive attitudes toward older patients, which they surmised was due to the development of better coping skills that positively affected attitudes. Using job title as a proxy, Liu and colleagues (2015) found that nurses in more senior roles had more positive attitudes than more junior nurses while Liu and colleagues (2012) also identified improvements in physicians' attitudes to older patients over time. Once again, the evidence is contradictory on the importance of years of experience in terms of the attitudes of healthcare professionals to older patients.

None of these demographic variables described emerges unequivocally from previous studies in terms of having clear predictive capabilities with regard to the attitudes of healthcare

professionals to older people. Thus, further exploration of the potential relationship or lack of relationship between these sociodemographic variables and the variable of attitudes to older patients is merited.

Having reviewed the potential relationships between personal aging anxiety, job role, work setting, and demographic characteristics of healthcare professionals and their attitudes to older patients, the following section states the research questions, summarizes the dissertation aims, and derives the study hypotheses.

Research Questions

The study poses five research questions:

- Question 1: What is the relationship between healthcare professionals' gender, age, race, ethnicity, education, geriatric or gerontological training, years of experience, and their attitudes toward older patients?
- Question 2: What is the relationship between healthcare professionals' job role and their attitudes to older patients, taking into account demographic variables, including gender, age, race, ethnicity, education, geriatric or gerontological training, and years of experience?
- Question 3: What is the relationship between healthcare professionals' work setting and their attitudes to older patients, taking into account demographic variables, including gender, age, race, ethnicity, education, geriatric or gerontological training, and years of experience?
- Question 4: What is the relationship between healthcare professionals' personal aging anxiety and their attitudes to older patients, taking into account demographic

variables, including gender, age, race, ethnicity, education, geriatric or gerontological training, and years of experience?

- Question 5: What is the relationship between healthcare professionals' personal aging anxiety, job role, and work setting, taking into account demographic variables, including gender, age, race, ethnicity, education, geriatric or gerontological training, and years of experience?

Aims and Hypotheses

The study aims and hypotheses are listed below:

AIM 1: To determine the relationship between healthcare professionals' gender, age, race, ethnicity, education, geriatric or gerontological training, years of experience, and their attitudes toward older patients.

A clear understanding of the predictive capacity of the sociodemographic variables of gender, age, race and ethnicity, and level and type of education do not emerge clearly from previous studies in terms of their relationship to the attitudes of healthcare professionals to older patients. Thus, further exploration of their potential relationship or lack of relationship to the variable of attitudes to older patients is merited and no hypothesis is stated. The sociodemographic variable of years of experience also has emerged from previous studies with inconsistent findings, but it is more strongly supported as having a potential correlation with attitudes to older patients, in the direction of greater years of experience being correlated with more positive attitudes to older people.

- H_1: Healthcare professionals who have greater years of experience will have more positive attitudes to older patients.

AIM 2: To determine the relationship between healthcare professionals' job role and their attitudes to older patients, taking into account demographic variables, including gender, age, race, ethnicity, education, geriatric or gerontological training, and years of experience.

While parallel studies exist of the attitudes toward older patients among nurses (Liu, Norman, & While, 2013), physicians (Meisner, 2012), social workers (Allen, Cherry, & Palmore, 2009), mental health therapists (Tomko & Munley, 2013), occupational therapists (Klein & Liu, 2010) and physical therapists (Blackwood & Sweet, 2015), few studies compare the attitudes of different types of healthcare professionals to older patients and these studies have returned inconsistent results (Wells et al., 2004; Kearney et al., 2000). As a result, no hypothesis is stated for Aim 2 which represents exploratory research on the influence of job role on healthcare professionals' attitudes to older patients.

AIM 3: To determine the relationship between healthcare professionals' work setting and their attitudes to older patients, taking into account demographic variables, including gender, age, race, ethnicity, education, geriatric or gerontological training, and years of experience.

Few studies have considered the influence of different work settings on the attitudes of healthcare professionals to older patients. High technology, highly intensive care settings may create the conditions where pre-existing negative attitudes toward older adults can translate to negative views of older patients who may be seen as less worthy of treatment or use of resources compared to younger patients (Lojun et al., 2010; Brandberg et al., 2013). In this study, the intensive care unit will be considered a proxy for high technology, highly intensive care settings.

- H_2: Attitudes toward older patients will be more negative in settings where there is more high technology, highly intensive care such as the intensive care unit

versus other inpatient care units, and inpatient care units versus outpatient care units.

Work settings in which time is tightly constrained may also provide the conditions in which pre-existing negative attitudes toward older adults translate to negative attitudes toward older patients. The emergency department is the setting that has been the most studied in this regard, with Deasey and colleagues' (2014) review indicating that emergency department nurses recognize that the needs of many frail older patients are not easily met in the emergency department, resulting in nurses feeling burdened by them and thus engaging in age blaming. In this study, the emergency department will be a proxy for time constrained work settings.

- $H_{3:}$ Attitudes toward older patients will be more negative in settings where time pressures are higher, such as the emergency department.

Long-term care units may be at risk for providing "impoverished" clinical environments in which standards of care are poor and observed attitudes of healthcare professionals toward older patients are negative (Brown et al., 2008, p.89; "The Myth of Improved Quality in Nursing Home Care", 2014). Stigmatizing behaviors by staff toward frail and cognitively impaired older adults have been identified in such settings (Zimmerman et al., 2014). On the other hand, positive affective ties have also been found between staff and older adults living in long-term care settings (Ball et al., 2009). In this study, long-term care facilities will be a proxy for work settings associated with impoverished environments but due to the conflicting evidence from prior studies, the hypothesis will be qualified.

- H_4: Attitudes toward older patients may be more negative in settings that are associated with impoverished environments, such as nursing homes and assisted living facilities.

AIM 4: To determine the relationship between healthcare professionals' personal aging anxiety and their attitudes to older patients, taking into account demographic variables, including gender, age, race, ethnicity, education, geriatric or gerontological training, and years of experience.

There is limited evidence about the relationship between aging anxiety and attitudes to older patients, but at least one study indicates that nurses with lower aging anxiety have more positive attitudes toward older people in general, and also toward working with older patients (Liu et al., 2015).

- H_5: Healthcare professionals with greater personal anxiety about aging will report more negative attitudes about older patients, holding other major factors constant.

AIM 5: To determine the relationship between healthcare professionals' job role, work setting, and personal aging anxiety and their attitudes toward older patients, taking into account demographic variables, including gender, age, race, ethnicity, education, geriatric or gerontological training, and years of experience.

There is a significant gap in the literature in respect of the stated variables both singly and in combination in terms of their relationship with attitudes to older patients. Yet it seems logical that there could be some interaction between them, as there is potential for overlap and interplay between one's job role and working setting, as well as between these factors and how one feels about one's own aging.

- $H_{6:}$ Healthcare professionals with higher personal aging anxiety, working in more high technology, time constrained settings will likely have more negative attitudes toward older patients.

Chapter Summary

At the same time that the older population is increasing in both absolute and relative terms in the U.S., the numbers of healthcare professionals choosing to specialize in their care is minimal and not increasing. The result is that older adults will continue to make up a significant proportion of patient caseloads for most healthcare providers, whether or not they realize this. Ageism among healthcare providers has been documented in a robust literature spanning 40 years with many different manifestations, including predominately negative stereotyping of older patients, negative attitudes toward older patients, and discriminatory behaviors such as restricting or reducing their care. The absorption by healthcare professionals of the biomedical master cultural narrative of aging which presents older patients as incurable, helpless, and hopeless, contributes to a cycle of relational ageism in which older patients are blamed or shamed for their situation by healthcare professionals whose ability to help them is constrained by resource and other organizational limitations. The purpose of this study is to explore the relationship between job role, work setting, and personal aging anxiety among healthcare professionals and how these factors influence their attitudes to older patients, with the goal of gathering evidence that can be used to disrupt the cycle of relational ageism in healthcare.

Chapter Three: Methodology

Chapter Overview

Chapter three presents the research methodology used to test the hypotheses outlined in chapter two regarding the attitudes of healthcare professionals to older patients. It describes the research design, population, setting, and sample information, and includes details of the study variables, the measurement instruments, data collection procedures and data analysis plan. The chapter concludes with a consideration of threats to validity of the study, and their amelioration, as well as study limitations.

Research Design

The study will employ a descriptive, cross-sectional, correlational design to achieve the project aims of determining the relationship between healthcare professionals' level of personal aging anxiety, their job role, their work setting, and their attitudes toward older patients. Descriptive research designs form a broad class of non-experimental designs, the purpose of which is to observe and describe relationships between variables rather than to infer causality (Polit & Beck, 2012). Such a design is an appropriate choice in the context of this research where little is known about the relationships between the variables of aging anxiety, job role, work setting, and attitudes toward older patients. Cross sectional research designs allow for the collection of all data at one point, or within a short time period, without longitudinal follow up (Hulley, Cummings, Browner, Grady, & Newman, 2013). Correlational research designs examine the relationships between variables, specifically the tendency for variation in one

variable to be associated with variation in another and are typically used when studying the effect of a potential relationship that cannot be manipulated (Polit & Beck, 2012). In this case, personal aging anxiety, job role, and work setting among healthcare professionals cannot be ethically or practically manipulated to determine any relationships between them and attitudes to older patients, but the correlational design does allow for an exploration of the potential relationships between these variables.

Population and Sample

Target population. This study is aimed at the population of healthcare professionals who are currently practicing. This includes a range of clinically qualified healthcare professionals, including physicians, physician assistants, nurses, certified nursing aides, social workers, physical therapists, occupational therapists, speech and language therapists, and other types of clinicians such as pharmacists. It also includes leaders and managers responsible for clinical services and/or non-clinical, day-to-day and strategic operations of healthcare provider organizations.

Research setting. Participants were recruited from a mid-sized, regional healthcare system in the Mid-Atlantic region of the United States. The health system employs more than 9,400 team members in five geographical community health networks (CHNs). The research setting will be comprised of two CHNs, known as CHN1 and CHN2, selected for participation by the health system's Medical Director of Geriatric Medicine and its Vice President for Research and Discovery. The total number of staff working for the two participating CHNs is 1,720. Both CHN1 and CHN2 are comprised of a range of healthcare services and settings, including acute care hospitals with an emergency department and an intensive care department, urgent care clinics, outpatient practices including specialists and primary care, and long-term

care facilities, including skilled nursing, memory care, assisted living and independent living for older adults. Leaders and managers attending this health system's Leadership Conference on October 16-17, 2017 were offered an opportunity to complete the survey online during breaks between conference sessions. This afforded an opportunity to increase the sample size and to gather data from healthcare professionals in influential positions across the Health System, including all five CHNs.

Sampling strategy. The goal was to recruit a minimum of 224 healthcare professionals from a purposive convenience sample to participate in a survey to ascertain their attitudes to their own aging and to older patients. A purposive sample is a non-representative sample, with the purpose of selecting participants who judged to be typical of the population or knowledgeable about the issues under study (Polit & Beck, 2012). A convenience sample uses those people most available to the researcher as participants, which in this case will be staff working in CHN1 and CHN2 of the participating Health System and leaders and managers attending the Health System Leadership Conference in mid-October 2017.

An email invitation to participate in an electronic survey was sent out by the health system's Director of Health Services Research to the corporate email address of all clinicians, and all clinical and non-clinical leaders or managers working in CHN1 and CHN2. A copy of the email invitation to participate is attached at Appendix A. For healthcare professionals working in long-term care facilities in CHN1 and CHN2 who did not have access to corporate email, paper surveys were made available via the facility administrator, as needed.

The student researcher attended the October 2017 Health System Leadership Conference and was present during breaks between sessions so that healthcare professionals who wished to complete the survey could do so. Any leaders or managers who had not already completed the

survey and wished to do so were invited to take it online at one of several computer stations set up in the lobby of the Leadership Conference venue by the student researcher with assistance from Health System staff.

A response rate of between 30% and 50% was the target, based on the health system's experience of response rates to previous electronic and paper surveys. The response rate represents the proportion of those contacted who actually participate in the study and is important to the validity of any inferences that the participants represent the population from which they are drawn (Hulley et al., 2013). Healthcare professionals, particularly physicians, are considered a challenging population to reach with a declining trend in response rates (Cook, Dickinson, & Eccles, 2009). In order to maximize the response rate and minimize non-response bias and consequent threats to validity, participants in CHN1 and CHN2 will be sent one pre-survey electronic notice by the Director of Health Services Research in the week prior to the survey distribution to alert them to look for it. A copy of this pre-survey notice is attached at Appendix B.

They will also be sent one electronic reminder from the Director of Health Services Research to complete the survey one week after it has been distributed. A copy of this reminder is attached at Appendix C. Administrators of long-term care facilities will receive the same reminder but with an additional paragraph that also reminds them to encourage their staff without access to corporate email to complete the survey. A copy of this reminder is attached at Appendix D. Participants were also be offered the opportunity to be entered into a prize drawing for one of four $25 gift cards if they complete the survey. Pre-survey notices, follow-up reminders, and monetary incentives have all been shown to increase survey response rates among healthcare professionals (Cook et al., 2009; Field et al, 2002; Kellerman & Herold, 2001).

Eligibility criteria. Table 3 displays inclusion and exclusion criteria for the study. Inclusion criteria focus on healthcare professionals who currently work in CHN1 or CHN2 either part-time or full-time in both clinical and non-clinical roles, working with patients of all ages (not just patients age 65 or older). Students are excluded, as the focus is on qualified healthcare professionals. The rationale for this is several-fold. Currently qualified and practicing healthcare professionals are an under-studied population as compared with health professions students. Qualified healthcare professionals are also the ones delivering the majority of care to older patients, and they are in a position to act as role models and mentors for future healthcare professionals in terms of how they interact with and treat older patients. Both clinical and non-clinical staff in leadership and management roles in CHN1 and CHN2 are also eligible for inclusion, on the basis that these staff have a key role with regard to shaping and reinforcing the organizational culture that defines the treatment of older patients (Threapleton et al., 2017). Leaders or managers attending the Health System Leadership Conference in October 2017 were also eligible to participate, whether or not they worked in CHN1 or CHN2.

Power Analysis

The power of a statistical test is determined by (1- β), where β is the probability of making a type II error in which the researcher fails to reject the null hypothesis when it is actually false. In other words, the study power (1- β) represents the probability of correctly rejecting the null hypothesis in the sample if the actual effect in the population is equal to or greater than the specified effect size (Hulley et al., 2013). Insufficiently powered studies are at risk for Type II errors and consequently may face threats to statistical conclusion validity (Polit & Beck, 2012). A series of *a priori* power analyses were undertaken for this study using G*Power software v. 3.1.9.2 to calculate the number of cases needed to detect small, medium,

Table 3

Inclusion and Exclusion Criteria

Healthcare Professional Inclusion Criteria	Healthcare Professional Exclusion Criteria
Currently working full or part-time in CHN1 or CHN2	
Currently practicing as a licensed clinician, including physicians, medical residents practicing under an attending physician, physician assistants, nurses (including licensed practical nurses, registered nurses, and nurse practitioners), certified nursing aides, social workers, physical therapists, occupational therapists, speech and language therapists, pharmacists, and other licensed clinicians	Currently a healthcare professions student in any discipline who is not yet licensed to practice, with or without supervision. Non-clinical employees of CHN1 and CHN2
Currently practicing as a licensed nursing home administrator or assisted living administrator in CHN 1 or CHN2	Currently a Nursing Home Administrator-in-Training or an Assisted Living Administrator-in-Training
Attendees of the October 2017 Health System Leadership Conference working in a leadership or management role in any CHN within the Health System whether clinical or non-clinical	

and large effects (Faul, Erdfelder, Buchner, & Lang, 2014; Faul, Erdfelder, Buchner, & Lang, 2009) using various numbers of predictors in the analysis depending on the need to collapse response categories in which there may be insufficient cases. In the best-case scenario, all 50 predictors can be included in the analysis assuming that there are sufficient cases to support this detail of analysis. In this case, R^2 estimates were entered into G*Power v. 3.1.9.2 to calculate Cohen's *f2* statistic for small (*f2* =.02), medium (*f2* = .15), and large effect sizes (*f2* = .35) for a multiple regression, using the total number of predictor variables (50). Findings from the power analysis based on 50 predictors are contained in Table 4.

Table 4

Required Sample Sizes by Effect Sizes: Best Case Scenario

R^2	Cohen's f^2	Effect size	Required *n*
$0.1 < r^2 < 0.3$	.02	Small	2,188
$0.3 < r^2 < 0.5$	.15	Medium	323
$r^2 > 0.5$	.35	Large	161

Note: Power calculated using β=0.8; α=0.05; 50 predictors

Findings from a power analysis based on a worst-case scenario of 20 predictors, assuming that insufficient cases are available requiring the collapse of the categories, are contained in Table 5. The actual decision on collapsing predictor categories will be made once data has been collected and it is possible to assess whether there are sufficient cases per predictor for each of the categorical variables. The focus will be on maintaining the maximum amount of information about clinical healthcare professionals.

Reports of effect sizes in similar research on the attitudes of healthcare professions could not be found, although research into aging anxiety among adults age 18-88 suggests that a small to medium effect size can be expected (Brunton & Scott, 2015). On this basis, this study aims to recruit a minimum of 224 participants. In the event that the indicated *n* or anticipated effect size

Table 5

Required Sample Sizes by Effect Sizes: Worst Case Scenario

R^2	Cohen's f^2	Effect size	Required *n*
$0.1 < r^2 < 0.3$	.02	Small	1,553
$0.3 < r^2 < 0.5$	.15	Medium	224
$r^2 > 0.5$	.35	Large	112

Note: Power calculated using β=0.8; α=0.05; 20 predictors

cannot be achieved, the power of the study would be reduced below 0.80. In order to maintain the study power with a smaller sample size (*n*), the number of predictor variables may be reduced by continuing to enter into further regression equations only those predictor variables that achieve significance ($p < 0.10$) in the baseline multiple regression equation.

Variables and Instrumentation

The study variables have been selected based on the literature and the theoretical framework of relational ageism reviewed in Chapter two of this dissertation. The variables include information about healthcare professionals relative to their background and demographics, their job role, work setting, level of personal aging anxiety, and their attitudes toward older patients. A complete list of study variables is contained in Table 6.

Background and demographics variables and instrumentation. It is important to consider healthcare professionals' background and demographic make-up in order to identify if these factors are influential on their attitudes to older patients. The sociodemographic variables of gender, age, race, ethnicity, highest level of education, presence or absence of geriatric or gerontological education, and years of experience have all been explored in studies of healthcare professionals' attitudes toward their own aging and older people with inconsistent results (Chonody, 2015; Liu, Norman, & While, 2015; Meisner, 2012; Samra et al., 2015). In this study, sociodemographic variables are used to describe the sample and are also be explored in terms of their bivariate correlations with the dependent variable (attitudes to older patients). In any cases where a significant bivariate correlation is found between a sociodemographic variable and the dependent variable, the sociodemographic variable will be treated as a covariate. The sociodemographic variables in this study are measured using the demographic portion of the survey created by the student researcher in Appendix E. At the request of the Health System

Table 6

Study Variables

Variable	Type	Data Type
Gender	Potential Covariate	Categorical
Age	Potential Covariate	Continuous
Race	Potential Covariate	Categorical
Ethnicity	Potential Covariate	Categorical
Highest Level of Education	Potential Covariate	Categorical
Level of Geriatric/Gerontological Training	Potential Covariate	Categorical
Years of Experience	Potential Covariate	Continuous
Job Role	Independent Variable	Categorical
Work Setting	Independent Variable	Categorical
Personal Aging Anxiety	Independent Variable	Continuous
Attitudes to Older Patients	Dependent Variable	Continuous

providing the research setting, additional demographic information was collected that will not form part of this study, including the number of years the participant has worked in the Health System and the percentage of time they spend working with older patients.

Job role and work setting variables and instrumentation. There is currently very limited research on job role as a potentially influential factor on the attitudes of healthcare professionals to older patients. As well, few studies have specifically compared the attitudes of different types of healthcare professionals to their own aging (Koukouli, Pattakou-Parasyri, & Kalaitzaki, 2014) or to older patients (Wells, Foreman, Gething, & Petralia, 2004; Kearney, Miller, Paul, & Smith, 2000). Yet it is conceivable that job role may have an influence on the personal aging anxiety of healthcare professionals or their attitudes toward older patients or both, primarily through the medium of professional training and socialization (Clarke, 1997). Therefore, job role will be an independent variable in this study and has been included in the initial demographic section of the survey created by the student researcher in Appendix E.

Similar to job role, work setting has received relatively little attention in the literature as a variable that might be correlated with healthcare professionals' attitudes to older patients. Liu and colleagues (2015) found that nurses in primary care, pediatrics, and mental health service settings were less likely than nurses working in geriatric settings to report liking working with older patients although they did not suggest any reasons for this. Several studies have suggested that healthcare professionals' attitudes toward older patients may be, at least in part, due to a poor fit between a complex and multi-morbid older patient and a high technology yet resource constrained setting (Ekdahl, Hellström, Andersson, & Friedrichsen, 2012; Lojun et al., 2010; Brandberg, Blomqvist, & Jirwe, 2013). Stereotyping of older patients as more likely to die may be a factor in settings like the Intensive Care Unit where resources are scarce and decision about how to allocate them are often pressing (Lojun et al., 2010; Brandberg et al., 2013). Blaming older patients for being frustrating and burdensome may be more likely to occur in an environment where time is highly constrained, like the emergency department of an acute hospital (Deasey, Kable, & Jeong, 2014). Thus, work setting has been included as an independent variable in this study and will be captured using the demographic section of the survey created by the student researcher in Appendix E.

Personal aging anxiety variable and instrumentation. Personal aging anxiety has most commonly been studied as a dependent variable with a focus on its antecedents and correlates (for an overview of aging anxiety studies see Brunton & Scott, 2015 and Lynch, 2000). It has more rarely been used as an independent variable. Personal aging anxiety can be understood as both an internal phenomenon (focused on the self) and an external phenomenon (focused on others who are old) (Lasher & Faulkender, 1993; Brunton & Scott, 2015). Personal aging anxiety thus influences not only adjustment to one's own aging but also one's attitudes and behaviors

toward older adults, including ageism (Bergman & Bodner, 2015). In the small number of studies of personal aging anxiety among healthcare and other helping services professionals, aging anxiety has been used as an independent variable to explore its influence on desire to work with older adults (Liu, Norman, & While, 2015; Koukouli, Pattakou-Parasyri, & Kalaitzaki, 2014; Wells, Foreman, Gething, & Petralia, 2004), and as a predictor of career satisfaction when working with older adults (Gendron, Welleford, Pelco, & Myers, 2016). However, only two studies could be found in which aging anxiety was used as a predictor of attitudes toward older adults (Liu et al., 2015; Bergman & Bodner, 2015), and only one of these was a study of healthcare professionals' attitudes toward older patients, in this case nurses (Liu et al., 2015).

The aging anxiety scale. In this study, personal aging anxiety is an independent variable and it was measured using the Aging Anxiety Scale (AAS) (Appendix E) (Lasher & Faulkender, 1993). The AAS is a 20-item scale comprising a four-factor model of personal aging anxiety, including: 1) Fear of Old People (α=.78, e.g. "I enjoy being around old people."); 2) Psychological Concerns (α=.74, e.g. "I expect to feel good about life when I am old."); 3) Physical Appearance (α=.71, e.g. "When I look in the mirror, it bothers me to see how my looks have changed with age."); and 4) Fear of Losses (α=.69. e.g. "The older I become the more I worry about my health.") (Lasher & Faulkender, 1993). Respondents record their agreement with each item on a five-point Likert scale from strongly agree (1) to strongly disagree (5). Seven of the twenty items are reverse-scored. The overall scale score is calculated as a mean score, with higher scores reflecting higher levels of aging anxiety. The overall scale has high face and concurrent validity, as well as high internal consistency, with the four factors explaining 50.6% of the total variance (Watkins, Coates, & Ferroni, 1998).

Sargent-Cox and colleagues (2014) have assessed and confirmed the structural validity of the AAS and concluded that it is a multidimensional construct. Each of the subscales represents a theoretically and conceptually distinct dimension of aging anxiety (Watkins et al., 1998; Sargent-Cox, Rippon, & Burns, 2014), with Fear of Old People and Fear of Losses being more externally focused and Psychological Concerns and Physical Appearance tapping into inner focused concerns about oneself (Lasher & Faulkender, 1993; Brunton & Scott, 2015). Assuming that internal consistency reliability of the subscale scores achieves a sufficient Cronbach's alpha (.70 or greater), the subscale scores may stand alone in the analysis; otherwise the overall scale score will be used.

Attitudes toward older patients variable and instrumentation. Attitudes toward older patients has received relatively little attention in the literature (Meisner, 2012; Liu et al., 2015). Yet several researchers have pointed out the importance of studying attitudes to older patients as a way of developing a more refined understanding of both attitudes and the reasons for these attitudes among healthcare professionals (Samra et al., 2015; Liu et al., 2015).

The geriatric attitudes scale. In this study, attitudes toward older patients is the dependent variable and was measured using the UCLA Geriatric Attitudes Scale (Appendix E) (UCLA-GAS) (Reuben, Lee, Eslami, Osterweil, Melchiore, & Weibtraub, 1998). The UCLA-GAS is a 14-item scale that measures healthcare providers' attitudes toward older patients. The instrument is comprised of five positively worded and nine negatively worded statements that are rated from 1 (strongly disagree) to 5 (strongly agree). Scores are reversed on the negatively worded items when calculating the total score. Higher scores indicate more negative attitudes to older patients. The UCLA-GAS has been shown to have modest internal consistency (Cronbach's Alpha = 0.76) (Reuben et al., 1998; an Zuilen, 2015). In subsequent testing, the

UCLA-GAS has been shown to comprise four factors, including 1) Social Value (α=.60, e.g. "Old persons don't contribute their fair share toward paying for their healthcare."); 2) Medical Care (α=.62, e.g. "Treatment of chronically old patients is hopeless."); 3) Compassion (αa=.62, e.g. "Elderly patients tend to be more appreciative of the medical care I provide than are younger patients."); and Resource Distribution (α=.61, e.g. "It is society's responsibility to provide care for its elderly persons.") (Lee, Reuben, & Ferrell, 2005).

For this study, the UCLA-GAS was amended to ensure face validity for participants who are not clinicians, such as those in non-clinical management and leadership roles, and to ensure face validity for clinicians other than physicians for whom the survey was originally developed. Specifically, the wording of question 36 will be revised to strike the word "my" such that the statement to be rated by participants read, "I would rather see younger patients than older ones." This question will also have a "not applicable" option on the rating scale for non-clinicians. Question 40 will be changed to remove the words "medical care", replacing them with the word "care" so that the statement to be rated by participants will read, "Older patients tend to be more appreciative of the care I provide than are younger patients." This question will also have a "not applicable" option for those who are not clinicians. Question 41 will be changed to remove the words "taking a medical history", replacing them with the words "getting information from" so that the statement to be rated by participants will read, "Getting information from older patients is frequently an ordeal." This question will also include an option of "not applicable". These revisions are shown in strike through font in the UCLA-GAS at Appendix E.

Data Collection

Study survey. Study data were collected and managed using REDCap electronic data capture tools hosted at Virginia Commonwealth University (VCU). REDCap (Research

Electronic Data Capture) is a secure, web-based application designed to support data capture for research studies, providing: 1) an intuitive interface for validated data entry; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for importing data from external sources (Harris et al., 2009). Primary data were collected through an online survey, using a unique survey URL (e.g. www.redcap.vcu.edu/rc/surveys/example999) that users can click on to access the survey. Upon clicking on the survey link, respondents will first encounter the study's online survey information sheet (Appendix D). This clearly indicates that by submitting the survey, a respondent has indicated that they have read and understood accurate information about the research in which they are participating and know that their participation is voluntary. Respondents who do not have access to email will be able to complete a pen and paper survey that will be entered into the REDCap database.

The survey contains a maximum of 46 forced choice questions (depending on branching logic) and should take about 5-10 minutes to complete. The study consent processes, survey questions, and study protocol achieved prior approval from VCU's, IRB with the Health System providing the research setting waiving jurisdiction to VCU's IRB following a review of the IRB application submitted to VCU. The study is being submitted to the VCU IRB for an exempt review, under category two. Category two exempt research includes survey procedures in which no identifiable information is collected, and where disclosure of responses would not reasonably place participants at any risk. All study recruitment materials and the information sheet embedded in the survey make it clear to potential participants that their responses are anonymous.

Pilot study survey. The study survey was piloted to determine whether respondents could follow the directions as intended and to gain an indication of the likely time for completion. Nine healthcare professionals were emailed the survey link and asked to give feedback on survey length (approximately 15 minutes), clarity of instructions, and technical or other concerns. Respondents were also asked to answer two questions in order to assess the survey's face validity: 1) Do you think there are any questions that should be deleted from the survey for any reason? Please indicate which question(s) and the reason(s); and 2) Are there any additional questions you believe would add valuable information to the study? Feedback was received from four respondents and has been incorporated into the survey and is summarized in Table 7 (shown in italics where text has been added and strikethrough where text has been deleted). The survey will be repiloted, if required, following proposal feedback.

The survey link will be emailed or provided in hard copy to potential study participants in CHN1 and CHN2 and will be made available to leaders and managers attending the October 2017 Health System Leadership Conference in an online format at pre-set computer stations as outlined in the sampling strategy discussed earlier. Hard copy surveys will be collected, in sealed envelopes by the student researcher and will be entered into REDCap. Once sufficient *n* is achieved, study data will be exported directly from REDCap into the Statistical Package for Social Sciences (SPSS) version 24 for data analysis.

Data Analysis

Data cleaning. Prior to statistical analysis data will be examined through SPSS using the procedures for data screening recommended by Tabachnick and Fidell (2013). Data will be checked for accuracy of data entry and for missing values using the SPSS missing value analysis procedure and Little's MCAR test to determine the randomness of missing data patterns. An

Table 7

Summary of Feedback from Survey Pilot

Type of Respondent	**Feedback**	**Resolution/Revision**
Physician	• Survey completion took less than 10 minutes • The survey introduction should include the information that the survey has been approved by Riverside Health System • Pilot participant wanted to navigate back to earlier questions but this option was not available • Question 5 is confusing for clinicians with an advanced degree, such as physicians and nurses • Question 13 would be easier to read with the inclusion of the word "older" before "patients"	• The text of the survey introduction now includes the words "*with the approval of Riverside Health System*." • Navigation back facility will be enabled so that participants can check or change earlier answers • Question 5 has been revised to include an option for *Advanced Clinical Degree, e.g. MD, DO, NP, PA* • Question 13 has been reworded to "Thinking about your typical schedule, what percentage of your time is spent with *older* patients *(*age 65 or older*)*?
Nurse	• Survey completion took 5 minutes (with interruptions) • No changes were recommended	None
Non-clinical administrator	• Survey completion took less than 10 minutes • Question 13 (% of time spent with older patients) was confusing, due to the pilot participant not being in a clinical role	• Question 13 has been revised to "Thinking about your typical schedule~~,~~ o what percentage of your time is spent with *older* patients* (age 65 or older)? (0-100%) o *I do not work with patients* **Note: Patients also includes older people you work with who are residents in long-term care settings."*
Non-clinical administrator	• Survey completion took less than 10 minutes. • Question 8 (job role) was confusing as it did not provide sufficient options for a respondent without a healthcare qualification • Question 12 (work setting) did not contain sufficient options for all likely types of respondent	• Question 8 has been revised to: "What is your current healthcare profession (check the one box that best describes your ~~profession~~ *current role*)? with an additional drop down for non-clinical staff that includes an expanded list of options with each option listed separately • Question 12 has been revised to include the option of an *administrative or research setting*

intercorrelational analysis will be performed to identify any significant correlations among variables. If multicollinearity is found, variables will be deleted or combined in order to maintain the coherence of the multiple regression analysis.

Descriptive statistics. Descriptive statistics will be used to describe the sample and will include means, standard deviations, and ranges for the continuous variables and frequencies for the categorical variables as shown in Table 8. If insufficient *n* is achieved in any category for the categorical variables, categories will be collapsed to ensure there are sufficient cases for analysis. For example, the following categorical variables may be collapsed depending on the *n* achieved: race, highest level of education, geriatric/gerontological education, job role, and work setting.

Bivariate correlation analysis. Bivariate correlation analysis will be used to examine correlations among all the variables, including gender, age, race, ethnicity, education, geriatric or gerontological training, years of experience, job role, work setting, personal aging anxiety and attitudes to older patients to determine if there are significant relationships. Categorical variables will be transformed into dummy variables prior to this analysis. The resulting correlation matrix will report the mean, standard deviation, N, Pearson Product-Moment correlation, and a *p* value for all continuous variables and the frequency (percentage), N, Pearson Product-Moment correlation, and a *p* value for all categorical variables. Categories of dummy variables may be collapsed as described above. Any correlation equal to or greater than .90 will be considered evidence of collinearity and the collinear variable(s) will not be entered into the subsequent regression equation in order to preserve its predictive ability (Tabachnik & Fidell, 2013).

Multivariate analysis: Multiple linear regression. Multiple linear regression techniques will be used to understand the effect of any of the sociodemographic variables of gender, age,

Table 8

Respondent Demographics

	Best Case Scenario: Un-collapsed Predictors (Degrees of Freedom)	Worst Case Scenario: Collapsed Predictors (Degrees of Freedom)	*n*	Mean (SD)	Range	%
Gender: Male Female Transgender	2	2	**X**			**X**
Age:	1	1	**X**	**X**	**X**	
Race: White/Caucasian Black or African American American Indian or Alaska native Asian Native Hawaiian or other Pacific Islander More than one race	5	2 (White, Black, Other Race)	**X**			**X**
Ethnicity: Hispanic Not Hispanic	1	1	**X**			**X**
Highest level of education: Did not complete High School High School/GED Some College Bachelor's Degree Master's Degree Advanced Graduate Work or PhD Advanced Clinical Degree, e.g. MD, DO, NP, PA	6	2 (Less than Bachelors, Bachelors/Masters, Advanced Degree/Ph. D/ Advanced Clinical Degree)	**X**			**X**
Time Since Training (will be calculated from respondents' answers to question 6: Year of graduation from highest level of education)	1	1	**X**	**X**	**X**	
	Best Case Scenario: Un-collapsed Predictors (Degrees of Freedom)	Worst Case Scenario: Collapsed Predictors (Degrees of Freedom)	*n*	Mean (SD)	Range	%
Months in current job role	1	1	**X**	**X**	**X**	

Table 8 *Continued*

	Best Case Scenario	Worst Case Scenario	*n*	Mean (SD)	Range	%
Months in employment with health system (being collected at the request of the health system but will not be included in the analysis)	n/a	n/a	**X**	**X**	**X**	
% of time spent treating older patients	1	1	**X**	**X**	**X**	
Job role: Physician Resident Physician Assistant Nurse (NP, LPN, RN) Certified Nursing Aide Physical Therapist Occupational Therapist Speech and Language Therapist Other type of therapist Case Manager Pharmacist Licensed Nursing Home Administrator Licensed Assisted Living Facility Administrator Non-clinical role (Administration)	16	2 (Physician, Nurse, Other Healthcare Professional)	**X**			**X**
Work Setting: Hospital Emergency Department In-Patient Intensive Care Unit Outpatient Continuing Care Retirement Community Skilled nursing/convalescent care Memory care Assisted living Independent living All levels of CCRC Skilled nursing care/convalescent care (not CCRC) Home Care Hospice Care Administrative Setting	11	6 (Hospital Inpatient Unit, Hospital ED, Hospital ICU, Outpatient, Long-term Care, Homecare/Hospice, Administration)	**X**			**X**

race, ethnicity, highest level of education, presence or absence of geriatric or gerontological education, years of experience and the dependent variable of attitudes to older patients only if significant bivariate correlations justify such further analysis. Multiple linear regression techniques will also be used to explore the effect of the independent variables of job role, work setting, and personal aging anxiety on the attitudes of healthcare professionals toward older patients. Multiple regression is a powerful but flexible analytic technique that can accommodate continuous and categorical variables, including covariates (Cohen, Cohen, West, & Aiken, 2003). The assumptions for multivariate regression will be tested prior to running the regression analysis and any violations of assumptions will be resolved, as needed, as summarized in Table 9 (Laerd Statistics, 2015). Any changes made to cases as a result of assumptions testing and resolution of assumptions violations will be reported in the results section of this dissertation.

Study aim 1: Demographic variables. Study aim 1 is to determine the relationship between healthcare professionals' sociodemographic characteristics including gender, age, race, ethnicity, education, geriatric or gerontological training, years of experience, and their attitudes toward older patients.

To achieve this aim, attitudes to older patients will be regressed on gender, age, race, ethnicity, education, geriatric or gerontological training, years of experience. Only one hypothesis is stated due to the inconclusive prior evidence about most of these sociodemographic variables and their relationship to attitudes to older patients. Hypothesis 1 states that healthcare professionals with greater years of experience will have more positive attitudes to older patients.

Table 9

Assumptions of Multivariate Regression

Assumption	**Assessment Method**	**Resolution**
Sufficient ratio of cases to IVs	*A priori* power analysis	Pre-survey notification, 1 reminder notification, and the offer of an incentive prize drawing
Absence of multicollinearity	Inspection of correlation matrices for variables with a correlation >0.9 and a tolerance value <.10	Delete multicollinear predictor variable(s) and re-check assumptions
No significant outliers, high leverage points or highly influential points	Use SPSS case wise diagnostics to identify any cases with a standardized residual with +3 standard deviations	Correct any data entry errors and re-check assumptions. If data entry is correct, identify any leverage values >.2. Identify Cook's Distance values >1. Remove significant outliers with high leverage and high influence and re-check assumptions.
Linearity of relationships between the dependent variable and independent variables	Inspection of scatter plot of studentized residuals against the unstandardized predicted values	Apply a transformation to the requisite independent variable(s) to bring about linearity and re-check assumptions
Homoscedasticity of residuals (equal error variances)	Inspection of scatter plot of studentized residuals against the unstandardized predicted values	Apply a transformation to the dependent variable to correct heteroscedasticity and re-check assumptions
Residuals are approximately normally distributed	Inspection of histogram with superimposed normal curve and a P-P plot or a Normal Q-Q plot of studentized residuals	Transform the non-normal variables and re-check assumptions

Study aim 2: Job role variable. Study aim 2 is to determine the relationship between healthcare professionals' job role and their attitudes to older patients, taking into account sociodemographic variables, including gender, age, race, ethnicity, education, geriatric or gerontological training, years of experience.

To achieve this aim, a partial model will be tested constituting the regression of attitudes to older patients on any of the demographic variables that demonstrate statistically significant correlation coefficients in the analysis under Aim 1 (gender, age, race, ethnicity, education, geriatric or gerontological training, years of experience) and job role. No hypothesis is stated for Aim 2 which represents exploratory research on the influence of job role on healthcare professionals' attitudes to older patients.

Study aim 3: Work setting variable. Study aim 3 is to determine the relationship between healthcare professionals' work setting and their attitudes to older patients, taking into account sociodemographic variables, including gender, age, race, ethnicity, education, geriatric or gerontological training, and years of experience.

To achieve this aim, a partial model will be tested constituting the regression of attitudes to older patients on the sociodemographic variables that demonstrated significant correlation coefficients in the analysis under Aim 1 (gender, age, race, ethnicity, education, geriatric or gerontological training, years of experience), and work setting. Statistically significant correlation coefficients will indicate support for Hypothesis 2 that predicts that attitudes toward older patients will be more negative in work settings where there is high technology, highly intensive care such as acute care versus outpatient care; Hypothesis 3 that predicts that attitudes toward older patients will be more negative in work settings where time pressures are higher, such as the emergency department; and Hypothesis 4 that predicts that attitudes toward older patients may be more negative in settings that are associated with impoverished environments, such as nursing homes and assisted living facilities.

Study aim 4: Personal aging anxiety variable. Study aim 4 is to determine the relationship between healthcare professionals' personal aging anxiety and their attitudes to older

patients, taking into account sociodemographic variables, including gender, age, race, ethnicity, education, geriatric or gerontological training, and years of experience.

To achieve this aim, attitudes to older patients will be regressed on gender, age, race, ethnicity, education, geriatric or gerontological training, years of experience, and personal aging anxiety. Statistically significant correlation coefficients will indicate support for Hypothesis 5 that predicts that healthcare professionals with greater personal anxiety about aging will report more negative attitudes about older patients, holding other major factors constant.

Study aim 5: Job role, work setting, and personal aging anxiety variables. Study aim 5 is to determine the relationship between healthcare professionals' job role, and work setting, and personal aging anxiety, and their attitudes toward older patients, taking into account sociodemographic variables, including gender, age, race, ethnicity, education, geriatric or gerontological training, and years of experience.

To achieve this aim, attitudes to older patients will be regressed on gender, age, race, ethnicity, education, geriatric or gerontological training, years of experience, job role, work setting, and personal aging anxiety. Statistically significant correlation coefficients will indicate support for Hypothesis 6 that predicts that healthcare professionals with higher personal aging anxiety, working in more high technology, time constrained settings will likely have more negative attitudes toward older patients.

Moderation analyses. Sample size allowing, it may be possible to also conduct exploratory moderation analyses to discover if the independent variables of job role and work setting moderate the relationship between personal aging anxiety and attitudes to older patients. Such analyses would involve the regression of the dependent variable attitudes to older patients on a multiplicative interaction term of *aging anxiety* X *job role* controlling for sociodemographic

variables already in the equation. A second moderation analysis could be computed for work setting by regressing attitudes to older patients on a multiplicative interaction term of *aging anxiety X work setting*. Prior to these analyses, the categorical variables job role and work setting would be transformed to dummy variables, and the variables aging anxiety, job role, and work setting would then be centered by converting them so that the mean of each variable is zero, in order to avoid any problems associated with multicollinearity when the interaction is entered into the equation (Tabachnick & Fidell, 2013). The hypothesis of moderation would be supported if the interaction term is statistically significant ($p \leq 0.05$) and therefore increases the predictive ability of the equation. Significance of the interaction would trigger simple effects testing to inspect the bivariate correlations between the dependent variable (attitudes to older patients) and aging anxiety for different job roles and work settings (Tabachnick & Fidell, 2013).

Study Validity

Correlational studies are especially vulnerable to threats to internal validity as they lack the controlled conditions of experiments and quasi experiments (Polit & Beck, 2012). Table 10 sets out the threats to the validity of this study and how these have been controlled or minimized by the study design. If threats to validity cannot be controlled or minimized Table 10 explains how they will be reported as study limitations.

Chapter Summary

This chapter presented details of the research methodology, including the research design, population, setting, and sample information. It included detailed information about the study variables, the measurement instruments, the data collection procedures and data analysis plan. The chapter concluded with a consideration of threats to validity of the study, and their amelioration, as well as study limitations.

Table 10

Potential Threats to Validity and Control of Threats

INTERNAL VALIDITY	
Threats to Validity	**Controls on Threats to Validity**
Self-report response bias	There is no reliable way to control for how individual respondents "see" the world, and therefore how they answer survey questions. This will be acknowledged as a threat to internal validity in the Limitations section of the write up.
Situational contaminants	As healthcare professionals will be contacted at their corporate email address, they will likely respond to the survey at work. This will be acknowledged as a threat to internal validity in the Limitations section of the write up.
CONSTRUCT VALIDITY	
Research expectancies	The use of simple blinding in the form of giving a general reason for the collection of data (for instance, wanting to understand attitudes to aging) rather than the actual reason (wanting to understand aging anxiety and its influence on attitudes to older patients) may prevent transmission of research expectancies from the researchers to healthcare professionals who respond to the survey.
STATISTICAL CONCLUSION VALIDITY	
Low statistical power	Undertaking a power analysis and reporting on the results will ensure that the sample size is adequate to result in sufficient statistical power at 1-ß of .80 and a medium sized effect of .35, thereby reducing this threat to statistical conclusion validity.
Alternative explanations or confounding factors	The introduction of covariates which are held constant (background and demographic variables) may reduce the general opportunities for confounding. Careful reporting of the testing of statistical assumptions and subsequent ameliorations of data, including the treatment of missing data, outliers and violations of normality, homogeneity etc. will also reduce threats to statistical conclusion validity.
EXTERNAL VALIDITY	
Representativeness	The use of purposive convenience sampling may limit the generalizability of study results. As it is not feasible to use random sampling methods, this will be stated as a study limitation.
Self-selection bias	Healthcare professionals who choose to participate may be inherently different from those who do not participate with regard to the study variables. This will be noted as a limitation of the study.

Chapter Four: Results

Chapter Overview

This chapter presents the research results, beginning with a review of the variables explored in the research and the data collection methods, followed by the data preparation and cleaning procedures conducted prior to data analysis. Next, the descriptive statistics of the study variables are presented along with intercorrelations between predictors, covariates and the dependent variable and a series of hierarchical multiple regressions relative to the study hypotheses.

Data Collection

The purpose of this study was to determine the relationship between healthcare professionals' level of personal aging anxiety, their job role, their work setting, and their attitudes toward older patients. The study employed a cross-sectional, descriptive, correlational research design. Data were collected from a purposive convenience sample of healthcare professionals working in two regions or Community Health Networks (CHN1 and CHN2) of a mid-sized, regional healthcare system in the Mid-Atlantic region of the United States via an online survey to which participants were invited via an email with the survey link embedded. To increase sample size, data were also collected at a two-day leadership conference comprised of clinical and non-clinical leaders from throughout all five Community Health Networks of the regional healthcare system. Participants were offered the option of a pen-and-paper survey or an iPad to access the on-line survey. Potential respondents were advised not to complete the survey if they had already done so electronically to avoid duplicates. A total of 89 surveys were

collected at the leadership conference from the 500 attendees, resulting in a response rate for the leadership conference of 17.8 percent. A total of 547 surveys were sent out electronically to employees in CHN1 and CHN2. Email bounce-backs were received from 60 of the 547 targeted recipients whose email inboxes were full, reducing the number of potential participants reached to 487. To a limited extent, unanticipated snowball sampling occurred as some recipients forwarded the survey link to other colleagues in the healthcare system. Therefore, it is not feasible to calculate an accurate response rate. Data collection lasted approximately four weeks with a total of 236 survey responses recorded in REDCap, 89 (37.7%) of which were collected at the leadership conference. After screening survey responses, a number of incomplete surveys were identified (n = 12) in which the respondent did not include responses for the dependent variable. A sizeable number of non-clinical healthcare professionals (n = 79) responded to the survey as the healthcare system had requested that they be included. They were excluded from this study based on the inclusion and exclusion criteria set out in Chapter Three stating that only clinicians (i.e. those with a healthcare qualification) would be included in the study. This resulted in a final sample of N = 145 healthcare professionals.

Data Cleaning and Preparation

Data entries were verified for accuracy and reasonableness and were corrected as needed. For example, three respondents indicated that they did have a healthcare qualification and classified it as “Not listed” then wrote in “Nurse”. These data points were recoded to indicate the type of nurse the respondent wrote in (e.g. Nurse Practitioner) as this was a choice with an available code. Several variables were recoded and simplified as follows. The variable gender was re-coded as dichotomous (male or female) as there were no respondents that identified as transgender or other. The variable race was re-coded as dichotomous (white or minority) as there

were very few respondents (4.8% in total across three separate categories) in the minority categories other than black/African American. The variable level of education was re-coded as college degree or no college degree. The variable geriatric or gerontological education was also re-coded as a dichotomous variable (yes or no). New multinomial categorical variables were created by collapsing categories in the job role and work setting predictor variables as shown in Table 11 in order to ensure sufficient cases for regression analysis. Despite the low number of respondents in the physician job role category (n = 10 comprised of nine physicians and one physician's assistant) it was decided to keep this group in the analysis due to the theoretical importance of the job role (Meisner, 2012) and its practical importance, as physicians represent a key discipline among healthcare professionals, especially on interprofessional teams. The work setting category of hospital emergency department also had a relatively small number of respondents (n = 14). This category was also kept due to its theoretical importance in the literature (Deasey et al., 2014) and its practical importance to the study in terms of hypothesis testing.

Missing values analysis. Missing values were determined by Little's MCAR test to be missing at random ($\chi 2 = 2.742$, df = 4, $p = .602$). No variables had more than 5% of cases with missing values. The only variables with missing cases were the categorical variables ethnicity (3.44%), highest level of education (2.06%) and geriatric or gerontological education (0.68%). There were no missing cases for continuous variables.

Intercorrelational analysis of multicollinearity. An intercorrelational analysis was performed to detect multicollinearity among variables. While several variable correlations were significant at the $p < .05$ and $p < .01$ level, correlations did not approach the level of concern for collinearity ($r > .70$), with the exception of the relationship between the Aging Anxiety

Table 11

Original and Collapsed Categorical Predictor Variables

Variable	Original Categories	N	Collapsed Categories Included in Regression Analyses	N
Job Role				
	Physician	7	Physician	10
	Resident	2		
	Physician Assistant	1		
	Nurse Practitioner (NP)	4	Nurse	69
	Registered Nurse (RN)	58		
	Licensed Practical Nurse (LPN)	7		
	Certified Nurse Aide (CNA)	4	Other clinician	47
	Physical Therapist (PT)	8	Therapist	19
	Occupational Therapist (OT)	2		
	Speech and Language Therapist (SLT)	2		
	Other type of therapist (Other)	7		
	Case Manager	8	Other clinician	47
	Pharmacist	4	Other clinician	47
	Licensed Nursing Home Administrator (LNHA)	8	Other clinician	47
	Licensed Assisted Living Facility Administrator (ALFA)	0		
Variable	Original Categories	N	Collapsed Categories Included in Regression Analyses	N
	Clinical Administrators – not LTC	8	Other clinician	47
Job Role				
	EMT/Paramedic	4	Other clinician	47
	Other type of medical technician	7	Other clinician	47
	Clinician – type not specified	4	Other clinician	47

Table 11 *Continued*

Work Setting				
	Hospital Emergency Department	14	Hospital Emergency Department	14
	Hospital Intensive Care Unit (ICU)	6	Hospital Inpatient	56
	Hospital Acute Care for the Elderly (ACE) Unit	2		
	Surgical Services	15		
	Other Inpatient – not specified	33		
	Urgent Care	2	Outpatient	31
	Primary Care	8		
	Other Outpatient – not specified	21		
	Skilled Nursing Care/Convalescent Care Unit	19	Long-term Care	33
	Continuing Care Retirement Community (CCRC)	14		
	Home Care	4	Not included due to insufficient cases for analysis	n/a
	Hospice Care	3	Not included due to insufficient cases for analysis	n/a
	Missing	4	Not included as setting missing	n/a

subscales and the total scale score. To avoid multicollinearity, the subscales were not entered concurrently into any regression model. With this exception, each predictor variable was entered into multiple regression analysis as a unique variable and multicollinearity was assessed using regression diagnostics.

Univariate outliers. Univariate outliers are cases that have a standardized score more than three standard deviations above or below the mean (Tabachnick & Fidell, 2013). After inspecting standardized scores for continuous variables, it was determined that there were no cases with Z scores > 3.29 on the dependent variable, thus no univariate outliers.

Descriptive statistics

This section presents descriptive statistics for the sample (after collapsing categorical variables) and is also summarized in Table 12. The sample (N = 145) was majority female (86.9%), white (84.1%), and non-Hispanic (90.8%). The median age of respondents was 48.4 years (*SD* = 11.4) with a range from 23-69 years. Almost three quarters of the sample (73.1%) had a college education at bachelor's degree level or higher. The majority of respondents (79.3%) had not received any formal geriatric or gerontological training. Of those who had received formal training in geriatrics or gerontology (*n* = 29), there were various types of qualifications or credentials as shown in Table 13. The largest category was "other" (*n* = 15) but it is not known what type of qualifications these are as respondents were not asked to specify this. Of the healthcare professions represented in the sample, nurses were the most numerous (30.8%) with registered nurses being the largest group within those who had a nursing qualification (*n* = 58), followed by licensed practical nurses (*n* = 7) and nurse practitioners (*n* = 4). The category of "other clinician" was extremely varied, numerous job roles as shown in Table 14. These other types of healthcare professionals were represented in comparatively smaller numbers, including pharmacists (2.9%), licensed nursing home administrators (5.6%), and paramedics (2.9%).

The mean years of experience of respondents in the sample was 15.9 (SD = 12.5) with a range of less than one year to 50 years' experience in their profession. Just over forty-eight percent (*n* = 70) of respondents worked in a hospital acute care setting. Within the acute setting 9.7% (*n* = 14) of healthcare professionals worked in the emergency department. Just under one third of healthcare professionals (*n* = 31) worked in an outpatient setting. Just under one quarter of healthcare professionals worked in long-term care (*n* = 33), with 13.1% of these (*n* = 19)

Table 12

Demographic Characteristics of Participants (N = 145)

	n	%	*M*	SD	Range
Gender:					
Male	18	12.4			
Female	126	86.9			
Missing	1	0.7			
Age:			48.4	11.4	23-69
Race:					
White/Caucasian	122	84.1			
Non-White/Minority	22	15.2			
Missing	1	0.7			
Ethnicity:					
Hispanic	4	2.8			
Non-Hispanic	136	90.8			
Missing	5	3.4			
Highest level of education:					
Less than college education	36	24.8			
College education	106	73.1			
Missing	3	2.1			
Formal geriatric or gerontological education:					
Yes	29	20			
No	115	79.3			
Missing	1	0.7			
Healthcare Qualification					
Physician	10	4.5			
Nurse	69	30.8			
Therapist	19	8.5			
Other clinician	47	16.0			
Years of experience			15.9	12.5	<1 year – 50 years
Work Setting:					
Hospital Emergency Department	14	9.7			
Hospital Inpatient	56	38.6			
Outpatient	31	21.4			
Long-term Care	33	22.8			
Other	7	4.8			
Missing	4	2.8			

Table 13

Geriatric and Gerontological Qualifications of Healthcare Professionals

Type of Qualification	*n*	%
Geriatric Medicine Fellowship or Clerkship	2	1.4
Geriatric Nursing Certification	4	2.8
Gerontology Undergraduate Degree	3	2.1
Post-Graduate Gerontology Certificate	3	2.1
Gerontology Master's Degree	1	0.7
Gerontology PhD	0	--
Other Geriatric or Gerontological Qualification	15	10.3
Total	29	20

Note: % is calculated of the total sample (N = 145)

Table 14

Other Clinicians

Type of Qualification	*n*	%
Case Manager - Nurse	1	0.7
Case Manager – Social Worker	7	4.8
Certified Medical Assistant	1	0.7
Certified Nursing Aide	4	2.9
Clinical Administrator (unspecified)	8	5.6
Echocardiographer	1	0.7
EKG Technician	1	0.7
EMT/Paramedic	4	2.9
Licensed Nursing Home Administrator	8	5.6
Medical Administrative Assistant	2	1.4
Medical Lab Technician	1	0.7
Nuclear Medicine Technologist	1	0.7
Pharmacist	4	2.9
Registered Dietician	1	0.7
Ultra Sonographer	2	1.4
Total	47	32.4

Note: % is calculated of the total sample (N = 145)

working in skilled nursing or convalescent centers and 9.6% (*n* = 14) working in continuing care retirement communities. Eleven healthcare professionals worked in other settings, including home care (*n* = 4), hospice (*n* = 3) and unspecified settings (*n* = 4*).*

Study Variables Intercorrelation Analysis

This section examples the relationships between study variables, including continuous and categorical predictor variables and the continuous dependent variable.

Bivariate correlation analysis. The relationships between continuous independent and dependent study variables were examined to determine if any significant correlations existed. First, mean scale scores for the Aging Anxiety Scale (AAS) and the Geriatric Attitudes Scale (GAS) were calculated, with higher scores indicating greater aging anxiety for the AAS scale and more negative attitudes to older patients for the GAS scale. Participants provided ratings using the following anchors on both scales: *1= "Strongly Disagree"; 2= "Disagree"; 3= "Neither Agree or Disagree"; 4= "Agree"; 5= "Strongly Agree".* For this sample, the Cronbach's alpha (α), a measure of internal consistency reliability, was .84 for the overall AAS scale. The subscales of the AAS were included in the analysis of bivariate correlations as the internal consistency reliabilities for each of the four subscales were adequate for fear of old people (α = .76), psychological concerns, (α = .71), physical appearance, (α = .70) and fear of losses subscales (α = .74). The Cronbach's alpha for the GAS was .66. The Cronbach alphas for the GAS subscales were insufficient with the exception of the social value subscale (α =.70, .54, .28 and .31 for social value, medical care, compassion, and resources distribution scales respectively) and they were therefore not included in the analysis. Table 15 presents the correlation matrix describing the relationships among continuous dependent and independent variables used in the regression analyses. While correlations between the overall mean score for

Table 15

Summary of Intercorrelations for Continuous Predictor Variables and Outcome Variable

	1	2	3	4	5	6	7	8
1. Age (years)	--	.658**	-.015	.087	.091	.004	-.098	.007
2. Years of experience		--	-.083	.014	-.003	-.067	-.055	-.102
3. Aging Anxiety mean score (AAS)			--	.290**	.537**	.812**	.786**	.796**
4. Attitudes to older patients mean score (GAS)				--	.542**	.253**	.174*	.046
5. Fear of old people (AAS subscale)					--	.330**	.324**	.186*
6. Psychological concerns (AAS subscale)						--	.472**	.638**
7. Concerns about physical appearance (AAS subscale)							--	.408**
8. Fear of loss (AAS subscale)								--

**p <0.01. * p <.05

the AAS and AAS subscales are to be expected, there were also several correlations that achieved statistical significance among other continuous study variables Age was positively associated with years of experience ($r = .658$, $p < .01$), such that the older the healthcare professional was, the more years of experience they had. Aging anxiety was positively associated with attitudes to older patients, such that healthcare professionals with greater personal aging anxiety had more negative attitudes to older patients ($r = .290$, $p < .01$). Negative attitudes to older patients was positively associated with three of the AAS subscales, such that having more negative attitudes to older patients was associated with having a greater fear of older people ($r = .542$, $p < .01$), greater psychological concerns about aging ($r = .253$, $p < .01$), and greater concerns about one's physical appearance as an aging person ($r = .174$, $p < .05$).

The relationships between dichotomous categorical independent variables and the continuous dependent study variable were next examined using a point bi-serial correlation. Point bi-serial correlation is a special case of Pearson's correlation and determines the correlation between one dichotomous variable and one continuous variable (Wherry, 1984). The resulting point bi-serial correlations are reported in Table 16. There were several noteworthy correlations that achieved statistical significance among categorical study variables. Having no formal geriatric or gerontological education was positively associated with more negative attitudes to older patients ($r = .165$, $p < .05$) and a greater fear of older people ($r = .176$, $p < .05$), such that those without formal geriatric or gerontological training had more negative attitudes toward older patients and a greater fear of older people.

Group differences in aging anxiety and geriatric attitudes scale scores. A two-way ANOVA analysis was performed to analyze potential group differences in aging anxiety scores for healthcare professionals in different job roles and work settings. The resulting means and

Table 16

Summary of Intercorrelations for Dichotomous Categorical Predictor Variables and Outcome Variable

	1	2	3	4	5	6	7	8	9	10	11
1. Gender	--	--	--	--	--	-.016	.068	-.001	.055	-.141	.068
2. Race	--	--	--	--	--	-.085	-.226	-.046	-.079	-.049	-.076
3. Ethnicity	--	--	--	--	--	.062	-.086	.027	-.004	.026	.113
4. Level of education	--	--	--	--	--	.014	.037	.081	-.017	-.055	-.050
5. Geriatric/gerontological education	--	--	--	--	--	.098	.165*	.176*	.016	.093	.036
6. AAS	--	--	--	--	--	--	.290**	.537**	.812**	.786**	.796**
7. GAS	--	--	--	--	--	--	--	.542**	.235**	.174*	.046
8. AAS (1)								--	.330**	.324**	.186*
9. AAS (2)									--	.472**	.638**
10. AAS (3)										--	.408**
11. AAS (4)											--

Notes. **p <0.01. * p <.05; Gender: reference category = female; Race: reference category = white; Ethnicity: reference category = non-Hispanic; Level of education: reference category = No college education; Geriatric/gerontological education: reference category = yes; AAS = Aging Anxiety Mean Scale Score; GAS = Geriatric Attitudes Mean Scale Score; AAS(1) = Fear of Old People Subscale; AAS(2) = Psychological Concerns Subscale; AAS(3) = Physical Appearance Subscale; AAS(4) = Fear of Losses Subscale

standard deviations are shown in Table 17. The sample size for work setting is lower as four cases had a missing value for this variable. The ANOVA analysis revealed that there was no statistically significant interaction between job role and work setting for overall aging anxiety score, $F(10, 123) = 1.7341$, $p = .080$, partial $\eta 2 = .124$. In other words, there was not a statistically significant mean difference in aging anxiety depending on the combined effect of the job role performed by the healthcare professional and the setting in which they performed their job.

A two-way ANOVA analysis was performed to analyze potential group differences in attitudes to older patient scores for healthcare professionals in different job roles and work settings. Means and standard deviations of healthcare professionals' self-reported attitudes to older patients are presented in Table 18. There was no statistically significant interaction between job role and work setting for mean attitudes to geriatric patients score, $F(10, 123) = .784$, $p = .644$, partial $\eta 2 = .060$. In other words, the mean differences in attitudes to older patients scores did not vary depending on the combined effect of the job role performed by the healthcare professional within a particular healthcare workforce setting.

Multiple Regression Analysis: Test of Assumptions

This section reviews the general procedures conducted for testing the assumptions of multivariate regression as outlined by Tabachnick and Fidell (2013), including the ratio of cases to IVs, multicollinearity, multivariate outliers, normality, linearity, and homoscedasticity. It also provides the results of these tests indicating the verification of each assumption of multiple regression.

Table 17

Aging Anxiety by Job Role and Work Setting

Job Role	Work Setting	N	Mean	SD
Physician	Acute Care (non-ED)	1	2.9	-
	Emergency Department	2	2.1	.77
	Long-term Care	1	2.45	-
	Outpatient	6	2.17	.56
	Other Work Setting	-	-	-
Total Physician – all work settings		10	2.26	.55
Nurse	Acute Care (non-ED)	32	1.99	.45
	Emergency Department	7	2.30	.28
	Long-term Care	8	2.18	.39
	Outpatient Setting	16	2.06	.65
	Other Work Setting	4	2.20	.62
Total Nurse – all work settings		67	2.07	.49
Therapist	Acute Care (non-ED)	7	1.8	.48
	Emergency Department	0	-	-
	Long-term Care	9	2.09*	.31
	Outpatient Setting	2	2.12	.10
	Other Work Setting	1	1.7	-
Total Therapist – all work settings		19	1.96	.38
Other Clinician	Acute Care (non-ED)	15	2.45	.56
	Emergency Department	5	2.28	.63
	Long-term Care	15	1.84	.33
	Outpatient Setting	8	2.23	.49
	Other Work Setting	2	2.07	.10
Total Other Clinician – all work settings		45	2.17	.52
Total - all types of clinician	Acute Care (non-ED)	55	2.11	.53
	Emergency Department	14	2.26	.46
	Long-term Care	33	2.01	.37
	Outpatient Setting	32	2.13	.56
	Other Work Setting	7	2.09	.47

Table 18

Attitudes to Older Patients by Job Role and Work Setting

Job Role	Work Setting	N	Mean	SD
Physician	Acute Care (non-ED)	1	2.50	-
	Emergency Department	2	2.57	.30
	Long-term Care	1	2.28	-
	Outpatient	6	2.59	.32
	Other Work Setting	-	-	-
Total Physician -all work settings		10	2.55	.27
Nurse	Acute Care (non-ED)	32	2.07	.49
	Emergency Department	7	2.20	.16
	Long-term Care	8	2.01	.24
	Outpatient Setting	16	1.81	.30
	Other Work Setting	4	1.89	.33
Total Nurse – all work settings		67	2.01	.41
Therapist	Acute Care (non-ED)	7	1.87	.44
	Emergency Department	-	-	-
	Long-term Care	9	1.91	.31
	Outpatient Setting	2	2.03	.15
	Other Work Setting	1	1.28	-
Total Therapist – all work settings		19	1.87	.36
Other Clinician	Acute Care (non-ED)	15	2.19	.34
	Emergency Department	5	2.21	.42
	Long-term Care	15	1.90	.21
	Outpatient Setting	15	1.90	.21
	Other Work Setting	8	1.97	.42
Total Other Clinician – all work settings		45	2.05	.34
Total - all types of clinician	Acute Care (non-ED)	55	2.08	.45
	Emergency Department	14	2.29	.30
	Long-term Care	33	1.94	.25
	Outpatient Setting	32	2.01	.43
	Other Work Setting	7	1.82	.38

Assumption of sufficient ratio of cases to IVs. The a priori power analysis was re-run with the number of predictors created by the collapsed categories of categorical predictor variables described earlier and summarized in Table 11. The collapsed categories resulted in grouping job role by physician, nurse, therapist, and other clinician while work setting was grouped as acute (non-emergency department), emergency department, outpatient, long-term care, and other work setting. This indicated that a sample size of $n = 114$ would be sufficient for detecting a large or medium study effect, so the current study's cases ($n = 145$) were sufficient to detect all but a small effect.

Assumptions of linearity, homoscedasticity, multicollinearity, multivariate outliers, and normality. An assumption of multiple regression is that the independent variables are linearly related to the dependent variable. Bivariate scatterplots were inspected and no non-linear relationships were detected thus confirming the assumption of linearity. The assumption of homoscedasticity is that the residuals are equal for all values of the predicted dependent variable. This assumption was verified by visual inspection of a plot of studentized residuals versus unstandardized predicted values which indicated that the predicted values were approximately evenly spread. Multicollinearity occurs when two or more independent variables are highly correlated with each other. The assumption of absence of multicollinearity among variables was assessed by inspecting regression coefficients among variables and tolerance values. There were no regression coefficients greater than .70 and no tolerance values less than .01 thus confirming the assumption of absence of multicollinearity. Multivariate outliers are cases with an unusual combination of scores on two or more variables (Tabachnik & Fidell, 2013). Multivariate outliers were assessed using case wise diagnostics in SPSS and none were detected. There were no cases with high leverage points (above .20) and all Cook's distance values were <1. One final

assumption of multiple regression is that the errors in prediction (i.e. the residuals) are normally distributed. This assumption was verified by inspection of a histogram with a superimposed normal curve and a P-P Plot of the standardized residuals which indicated that the residuals for the dependent variable were approximately normally distributed.

Multiple Regression Analysis: Hypothesis Testing

This section describes the procedures used for testing the study hypotheses using hierarchical multiple regression analysis with study predictors entered into the regression model in blocks.

Study aim one. Study aim 1 is to determine the relationship between healthcare professionals' sociodemographic characteristics including gender, age, race, ethnicity, education, geriatric or gerontological training, years of experience, and their attitudes toward older patients. To achieve study aim 1, attitudes to older patients were regressed on gender, age, race, ethnicity, education, geriatric or gerontological training, and years of experience. R^2 for the overall model was 9.7% with an adjusted $R^2$of 4.8%, a small size effect according to Cohen (1988). Gender, age, race, ethnicity, level of education, geriatric or gerontological education, and years of experience did not significantly predict attitudes to older patients, $F(7,127) = 1.956$, $p < .066$.

Study hypothesis 1 predicts that healthcare professionals with greater years of experience will have more positive attitudes to older patients. This study hypothesis was not confirmed as the regression coefficient for years of experience did not achieve significance ($\beta = -.137$, $p = .232$) as shown in Table 19.

Study aim two. Study aim 2 is to determine the relationship between healthcare professionals' job role and their attitudes to older patients, taking into account sociodemographic variables, including gender, age, race, ethnicity, education, geriatric or gerontological training,

Table 19

Regression of Attitudes to Older Patients on Sociodemographic Characteristics

Variable	R^2	b	SE_b	β
Gender		.080	.106	.065
Age		.006	.004	.181
Race		-.182	.100	-.159
Ethnicity		-.092	.204	-.039
Level of Education		.116	.081	-.124
Formal Geriatric or Gerontological Education		.146	.089	.142
Years of Experience		-.005	.004	-.137
Total R^2	.097			
F	1.956			
N	134			

Notes. b = unstandardized regression coefficient; SE_β = Standard error of the coefficient; β = standardized coefficient.

and years of experience. To achieve this aim, a partial model was tested constituting the regression of attitudes to older patients on the sociodemographic variable that demonstrated a statistically significant regression coefficient in the analysis under Aim 1 (formal geriatric or gerontological education) and job role. No hypothesis was stated for Aim 2 which represents exploratory research on the influence of job role on healthcare professionals' attitudes to older patients. R^2 for the overall model was 15.9% with an adjusted $R^2$of 13.5%, a small size effect according to Cohen (1988). Job role significantly predicted attitudes to older patients $F(4,139) = 6.569$, $p < .000$, whereas formal geriatric or gerontological education did not ($\beta = .153$, $p = .053$). Within this model, being a physician ($\beta = .314$, $p < .000$) was significantly correlated with having more negative attitudes to older patients as compared to all other types of clinicians, as shown in Table 20.

Study aim three. Study aim 3 is to determine the relationship between healthcare professionals' work setting and their attitudes to older patients, taking into account

Table 20

Regression of Attitudes to Older Patients on Geriatric/Gerontological Education and Job Role

Variable	ΔR^2	ΔF	b	SE_b	β
Step 1		3.965*			
Geriatric or Gerontological Education			.152	.078	.153
Step 2	.132**	7.262**			
Physician			.494	.130	.314**
Nurse			-.032	.071	-.040
Therapist			-.167	.102	-.141
Total R^2	.159*				
F	6.589**				
N	143				

Notes. *p<0.05; **p <0.01; b = unstandardized regression coefficient; SE_β = Standard error of the coefficient; β = standardized coefficient; Reference category: Other Clinician

sociodemographic variables, including gender, age, race, ethnicity, education, geriatric or gerontological training, years of experience, and job role. To achieve this aim, a partial model was tested constituting the regression of attitudes to older patients on the sociodemographic variable that demonstrated a significant regression coefficient in the analysis under Aim 1 (geriatric or gerontological education). Formal geriatric or gerontological education was entered in step one, job role was entered in step two and work setting was entered in step three. R^2 for the overall model was 20.1% with an adjusted $R^2$of 16.0%, a medium size effect according to Cohen (1988). The addition of work setting to the prediction of attitudes to older patients did not lead to a significant increase in R^2 $F(3,136) = 4.889$, p =.072 as seen in step three of the model in Table 21.

Study hypothesis 2 predicts that attitudes toward older patients will be more negative in work settings where there is high technology, highly intensive care such as acute care versus outpatient care. Hypothesis 2 was not confirmed as the regression coefficient for working in an

Table 21

Regression of Attitudes to Older Patients on Geriatric/Gerontological Education, Job Role, and Work Setting

Variable	ΔR^2	ΔF	b	SE_b	β
Step 1	.027*	3.965*			
Geriatric or Gerontological Education			.118	.078	.118
Step 2	.132**	7.262**			
Physician			.516	.133	.328**
Nurse			-.051	.072	-.064
Therapist			-.149	.102	-.126
Step 3	.042	2.387			
Emergency Department			.117	.110	.087
Outpatient			-.146	.083	-.151
Long-term Care			-.124	.082	-.130
Total R^2	.201				
F	4.889**				
N	139				

Notes. *p <0.05; **p <0.01; b = unstandardized regression coefficient; SE_β = Standard error of the coefficient; β = standardized coefficient; Reference categories: Job role – Other Clinician; Work Setting - Acute care (non ED)

outpatient setting versus an acute (i.e. inpatient) setting was not statistically significant (β = -.151, p = .08), although it was in the predicted direction (i.e. a negative regression coefficient indicates less negative attitudes to older patients among healthcare professionals working in the outpatient setting versus those working in an acute inpatient setting).

Study hypothesis 3 predicts that attitudes toward older patients will be more negative in work settings where time pressures are higher, such as the emergency department. This hypothesis was not confirmed, as demonstrated by the regression coefficient for working in the emergency department which did not achieve statistical significance (β = .087, p = .290), although it was in the predicted direction (i.e. a positive regression coefficient indicates more

negative attitudes to older patients for healthcare professionals working in the emergency department) as shown in Table 20.

Study hypothesis 4 predicts that attitudes toward older patients may be more negative in settings that are associated with impoverished environments, such as nursing homes and assisted living facilities. Hypothesis 4 was not confirmed based on the lack of statistical significance of the regression coefficient for working in a long-term care setting (β = -.130, p = .132) which was also in the opposite direction predicted (i.e. the negative coefficient indicates more positive attitudes to older patients).

Study aim 4. Study aim 4 is to determine the relationship between healthcare professionals' personal aging anxiety and their attitudes to older patients, taking into account all sociodemographic variables, including gender, age, race, ethnicity, education, geriatric or gerontological training, and years of experience. To achieve this aim, attitudes to older patients were regressed on gender, age, race, ethnicity, education, geriatric or gerontological training, years of experience, job role, work setting, and personal aging anxiety. A hierarchical multiple regression was performed to determine if the addition of aging anxiety improved the prediction of attitudes to older patients over and above all sociodemographic variables listed above, job role, and work setting. The variables gender, age, race, ethnicity, education, geriatric or gerontological training, and years of experience were entered together in step one, job role was entered in step two, work setting was entered in step three and aging anxiety was entered in step four. R^2 for the overall model was 34.1% with an adjusted $R^2$of 33.0%, a large size effect according to Cohen (1988). Aging anxiety significantly predicted attitudes to older patients $F(14,120) = 4.440$, $p < .000$ as seen in Table 22.

Table 22

Regression of Attitudes to Older Patients on Geriatric/Gerontological Education, Job Role, Work Setting, and Aging Anxiety

Variable	ΔR^2	ΔF	b	SE_b	β
Step 1	.097	1.956			
Gender			-.273	.118	-.223*
Age			.005	.004	.143
Race			-.150	.090	-.132
Ethnicity			-.274	.184	-.115
Level of Education			-.120	.074	-.129
Geriatric or Gerontological Education			.042	.081	.041
Years of Experience			-.005	.003	-.138
Step 2	.169**	9.507**			
Physician			.750	.154	.485**
Nurse			-.049	.073	-.060
Therapist			-.048	.102	-.041
Step 3	.042	2.479			
Emergency Department			.113	.111	.082
Outpatient			-.149	.089	-.154
Long-term Care			-.113	.079	-.120
Step 4	.033*	5.949*			
Aging Anxiety			.152	.062	.188*
Total R^2	.341				
F	4.440**				
N	134				

Notes..*p <0.05; b = unstandardized regression coefficient; SE_β = Standard error of the coefficient; β = standardized coefficient; Reference categories: Job role – Other Clinician;
Work Setting - Acute care (non ED)

Study hypothesis 5 predicts that healthcare professionals with greater personal anxiety about aging will report more negative attitudes about older patients, holding other major factors constant. Relative to male healthcare professionals, female healthcare professions have an attitudes to older patients score that is .223 lower than male healthcare professionals (indicating less negative attitudes toward older patients) and physicians have an attitudes to older patients score that is .485 higher than nurses, therapists or other types of clinician (indicating more negative attitudes toward older patients). Controlling for all sociodemographic characteristics

shown in Table 22, as well as job role and work setting, healthcare professionals with higher aging anxiety have an attitudes to older patients score that is .188 higher than healthcare professionals with lower aging anxiety scores. Thus, hypothesis 5 was confirmed by the statistically significant regression coefficient for aging anxiety (β = .188, p = .016) with higher aging anxiety being correlated with more negative attitudes to older patients as shown in Table 22.

Study aim 5. Study aim 5 is to determine the relationship between healthcare professionals' job role, work setting, and personal aging anxiety, and their attitudes toward older patients, taking into account sociodemographic variables, including gender, age, race, ethnicity, education, geriatric or gerontological training, and years of experience. To achieve this aim, a hierarchical multiple regression was performed with the variables gender, age, race, ethnicity, education, geriatric or gerontological training, and years of experience entered together in step one, and the variables job role, work setting, and aging anxiety entered together in step two. The full details of this regression model are contained in Table 23. R^2 for the overall model was 26.4% with an adjusted $R^2$of 24.2%, a medium size effect according to Cohen (1988). Aging anxiety significantly predicted attitudes to older patients $F(14,120) = 4.440$, $p < .000$. The full model of gender, age, race, ethnicity, education, geriatric or gerontological training, years of experience, job role, work setting, and aging anxiety to predict attitudes to older patients was statistically significant, R^2 =.341, $F(7,120) = 4.440$ $p < .000$, adjusted R^2 = .264.

Study hypothesis 6 predicts that healthcare professionals with higher personal aging anxiety, working in more high technology, time constrained settings will likely have more negative attitudes toward older patients. Hypothesis 6 was partially confirmed by the

Table 23

Hierarchical Multiple Regression Predicting Attitudes to Older Patients from All Sociodemographic Variables, Job Role, Work Setting, and Aging Anxiety

Predictor	ΔR^2	ΔF	b	SE_b	β
Step 1	.097	1.956			
Gender			-.273	.118	-.223*
Age			.005	.004	.143
Race			-.150	.090	-.132
Ethnicity			-.274	.184	-.115
Level of Education			-.120	.074	-.129
Geriatric/Gerontological Education			.042	.080	.041
Years of Experience			-.005	.004	-.138
Step 2	.244**	6.348**			
Physician			.750	.154	.485**
Nurse			-.049	.073	-.060
Therapist			-.048	.102	-.041
Emergency Department			.113	.111	.082
Outpatient			-.149	.084	-.154
Long-term Care			-.113	.079	-.120
Aging Anxiety			.152	.062	.188*
Total R^2	.341				
F	4.440**				
N	134				

Notes. **p <0.01 *p <.05; B = unstandardized regression coefficient; SE_β = Standard error of the coefficient; β = standardized coefficient; Reference categories : Job role – Other Clinician; Work Setting – Acute (non ED).

statistically significant regression coefficients for physicians (β = .485, p < .000) and those with higher personal aging anxiety (β = .188, p = .016) who had more negative attitudes to older patients as shown in Table 23. Regression coefficients for work setting were not significant, however.

Moderation analyses. Moderation analyses were undertaken to discover if the independent variables of job role and work setting moderate the relationship between personal aging anxiety and attitudes to older patients (see Figure 3). The objectives of this analysis were

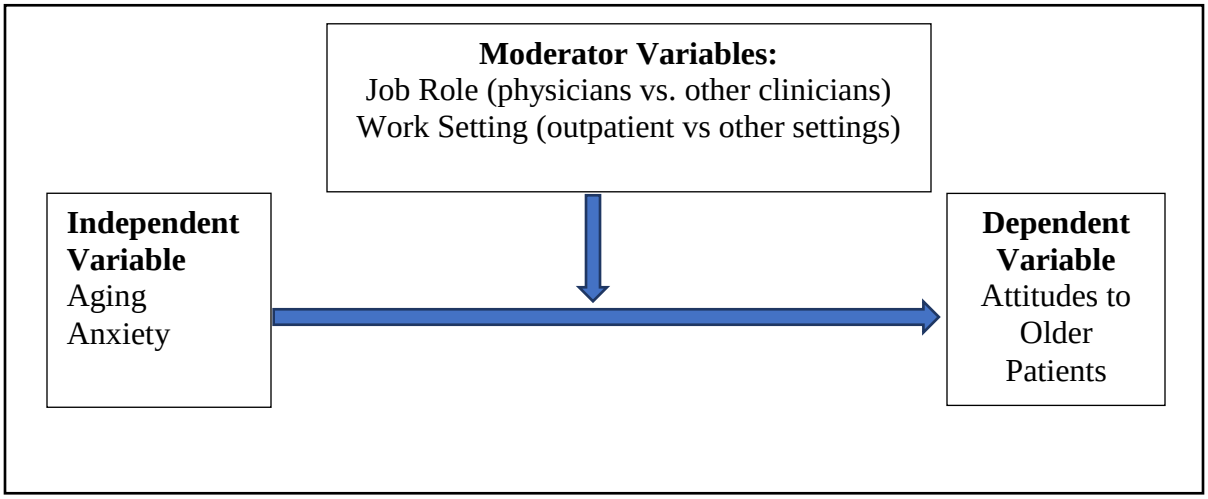

Figure 3. Moderation of the relationship between aging anxiety and attitudes to older patients.

to: 1) determine whether a moderator effect exists for different job roles and work settings; and 2) if a moderator effect is detected, to determine how the relationship between aging anxiety and attitudes to older patients is different for different types of healthcare professionals and in different types of healthcare work settings. The moderation analyses were performed by regressing the dependent variable attitudes to older patients on a multiplicative interaction term of *aging anxiety* X *job role* and *aging anxiety X work setting* as shown in Figure 3. Prior to performing the moderation analyses, the variable aging anxiety was centered by converting it so that the mean was zero, in order to avoid any problems associated with multicollinearity when the interaction was entered into the equation (Tabachnick & Fidell, 2013).

The variables job role and work setting were dichotomized, as follows. The variable job role was dichotomized to physician versus all other types of healthcare professionals, based on the results of a one-way ANOVA assessing the correlations between job role and attitudes to older patients. Physicians had statistically significant mean differences in attitudes to older

patients scores of .542 (95% CI, .207 to .876), $F(3,141) = 7.335$, $p = .000$ compared to nurses; of .670 (95% CI, .283 to 1.056), $F(9,135) = 4.136$, $p = .001$ compared to therapists; and .482 (95% CI, .138 to .827), $F(9,135) = 4.136$, $p = .001$ meaning that physicians had more negative attitudes to patients than nurses, therapists, and other types of clinicians.

In order to determine the most appropriate way to dichotomize the variable work setting, one-way ANOVAs were run between work setting and attitudes to older patients and work setting and aging anxiety. Neither ANOVA revealed any statistically significant mean differences in attitudes that could be used to justify the dichotomization of the work setting variable. Therefore, the decision on the best method to dichotomize the work setting variable was made based on conceptual logic that the long-term care setting was different from the hospital inpatient, hospital emergency department, and outpatient settings, given that these latter settings are primarily medical in nature, whereas the long-term care setting is primarily residential in nature.

Aging anxiety and job role. The assumptions of moderation analysis were first tested, including linearity, multicollinearity, outliers, homoscedasticity, and normality and no violations were found. A hierarchical multiple regression was next run to assess whether an increase in variation could be explained by the addition of an interaction term between job role and aging anxiety to a main effects model. Job role (i.e. being a physician) did not moderate the effect of aging anxiety on attitudes to older patients, as evidenced by an increase in total variation explained of 1.8%, which was not statistically significant ($F(1, 141) = 3.222$, $p = .075$). The full results of the moderation analysis are contained in Table 24.

Table 24

Multiple Regression Analysis Testing Moderation of Job Role Predictor and Attitudes to Older Patients by Aging Anxiety

Variable	*b*	SE_b	β
Aging Anxiety	.248	.065	.303*
Physician vs Other Clinician	.562	.124	.353*
Aging Anxiety*Physician	-.412	.230	-.146
Total R^2	.202		
F	3.222		
N	144		

Notes. *p <.01; *B* = unstandardized regression coefficient; SE_β = Standard error of the coefficient; β = standardized coefficient.

Aging anxiety and work setting. A hierarchical multiple regression was next run to assess whether an increase in variation could be explained by the addition of an interaction term between work setting and aging anxiety to a main effects model. The assumptions of moderation analysis was first tested, including linearity, multicollinearity, outliers, homoscedasticity, and normality and no violations were found. A hierarchical multiple regression was run to assess the increase in variation explained by the addition of an interaction term between aging anxiety and work setting to a main effects model. Work setting did not moderate the effect of aging anxiety on attitudes to older patients, as evidenced by an increase in total variation explained of 1.2%, which was not statistically significant (F (1, 141) = 1.932, p = .167). The full results of the moderation analysis are contained in Table 25.

Summary of Findings

Findings relative to each study hypothesis are summarized in Table 26 and in this section.

Study Hypothesis 1 that healthcare professionals with greater years of experience would have more positive attitudes to older patients was not supported by the study findings. This was

Table 25

Multiple Regression Analysis Testing Moderation of Work Setting Predictor and Attitudes to Older Patients by Aging Anxiety

Variable	*b*	SE_b	β
Aging Anxiety	.263	.070	.321**
LTC versus other setting	-.123	.079	-.128
Aging Anxiety*LTC	-.273	.197	-.121
Total R^2	.100		
F	1.932		
N	142		

Notes. *p <.01; *B* = unstandardized regression coefficient; SE_β = Standard error of the coefficient; β = standardized coefficient; LTC = long-term care.

Table 26

Summary of Study Findings

Hypothesis	**Supported**
H1: Healthcare professionals with greater years of experience will have more positive attitudes to older patients	No
H:2 Attitudes toward older patients will be more negative in work settings where there is high technology, highly intensive care such as acute care versus outpatient care	No
H:3 Attitudes toward older patients will be more negative in work settings where time pressures are higher, such as the emergency department	No
H:4 Attitudes toward older patients may be more negative in settings that are associated with impoverished environments, such as nursing homes and assisted living facilities	No
H:5 Healthcare professionals with greater personal anxiety about aging will report more negative attitudes about older patients, holding another major factor constant	Yes
H:6 Healthcare professionals with higher personal aging anxiety, working in more high technology, time constrained settings will likely have more negative attitudes toward older patients	Partially
Moderation analyses: The moderator variables of job role and work setting did not increase the effect of the predictor variable of aging anxiety on the outcome variable attitudes to older patients.	No

determined by the regression coefficient for years of experience which did not achieve significance (β = -.137, p = .232).

Study hypothesis 2 that attitudes toward older patients would be more negative in work settings where there is high technology, highly intensive care such as acute care versus outpatient care was not supported by the study findings, as the regression coefficient for working in an outpatient setting versus an acute (i.e. inpatient) setting was not statistically significant (β = -.151, p = .08).

Study hypothesis 3 that attitudes toward older patients would be more negative in work settings where time pressures are higher, such as the emergency department was not confirmed by the study findings, as demonstrated by the regression coefficient for working in the emergency department which did not achieve statistical significance (β = .087, p = .290).

Study hypothesis 4 that attitudes toward older patients might be more negative in settings that are associated with impoverished environments, such as nursing homes and assisted living facilities, was not confirmed by the study findings based on the lack of statistical significance of the regression coefficient for working in a long-term care setting (β = -.130, p = .132).

Study hypothesis 5 that healthcare professionals with greater personal anxiety about aging would report more negative attitudes about older patients, holding other major factors constant, was confirmed by the statistically significant regression coefficient for aging anxiety (β = .188, p = .016) with higher aging anxiety being correlated with more negative attitudes to older patients.

Study hypothesis 6 that healthcare professionals with higher personal aging anxiety, working in more high technology, time constrained settings will likely have more negative attitudes toward older patients was partially confirmed by the statistically significant regression

coefficients for physicians (β = .756, p < .000) and those with higher personal aging anxiety (β = .181, p < .05) who had more negative attitudes to older patients.

Moderation analyses: Study findings indicate that job role (i.e. being a physician) did not moderate the effect of aging anxiety on attitudes to older patients, as evidenced by an increase in total variation explained of 1.8%, which was not statistically significant (F (1, 141) = 3.222, p = .075). Study findings also indicate that work setting (i.e. working in long-term care) did not moderate the effect of aging anxiety on attitudes to older patients, as evidenced by an increase in total variation explained of 1.2%, which was not statistically significant (F (1, 141) = 1.932, p = .167).

Chapter Five: Discussion

Chapter Introduction

This chapter presents a discussion of the research findings, including their theoretical and practical implications. It then makes recommendations for future research on the attitudes of healthcare professionals to aging. The chapter ends with a summary of study limitations, followed by conclusions.

Overview

The goal of this study was to explore the relationship between attitudes to aging among healthcare professionals and their attitudes toward older patients. The study used relational ageism as a theoretical framework to guide an exploration of how internal factors, including personal aging anxiety, and external factors, including job role and work setting, impact the way healthcare professionals view older patients. Findings indicate that personal aging anxiety is correlated with negative attitudes to older patients. Practicing healthcare professionals are an under-researched population, especially regarding ageism, and little has been known about their attitudes to their own aging. The application of aging anxiety as a predictive, rather than an outcome, variable is an innovative development of this study. The other variables of interest -- job role and work setting – are also understudied in health care research yet may also yield promising results as predictive variables. Findings from this study can be used to develop best practices in healthcare workforce education, training, and models of care in order to reduce the

potentially negative impact of ageist attitudes among healthcare professionals to the care of older patients.

Study Results

Characteristics of the sample. The sample (N = 145) ranged widely in age with a majority of respondents being female (86.9%), white (84.1%), and educated to college level (73.1%), although relatively few respondents held a higher clinical qualification such as M.D., D.O., N.P., or P.A. As is consistent with the low numbers of geriatric and/or gerontological specialists nationally (The American Geriatrics Society, 2013), the majority of respondents (79.3%) had not received any formal geriatric or gerontological training. Within the sample, nurses were the most numerous type of healthcare professional (30.8%), with comparatively smaller numbers of physicians (4.5%), therapists (including physical, occupational, speech and language, and other types of therapist) (8.5%), pharmacists (1.8%), and licensed nursing home administrators (2.7%). While these percentages may partially reflect the composition of the healthcare workforce more generally, with nurses being the largest occupational group, some are also likely the result of challenges in reaching certain types of healthcare professionals, such as physicians (Cook, Dickinson, & Eccles, 2009). The lack of ethnic and racial diversity in the sample may reflect the lack of diversity among clinicians more generally, a professional group that includes far fewer minorities in proportion to their representation in the general population (Noonan, Lindong, & Jaitley, 2013). One ramification of this sample characteristic may result in an exacerbation of the known health inequities affecting minority patients (Peek et.al., 2012).

The predictive capacity of sociodemographic variables. An aim of this study was to determine the relationship between healthcare professionals' sociodemographic characteristics including gender, age, race, ethnicity, education, geriatric or gerontological training, years of

experience, and their attitudes toward older patients. Previous studies have returned mixed and conflicting results regarding the predictive capacity of a range of sociodemographic variables, including gender (Furlan & Fehlings, 2009; Tomko & Munley, 2011; Leung et al., 2011), age (Liu et al., 2015; Leung et al., 2011), race and ethnicity (Gething et al., 2002; Liu et al., 2015), level of education (Furlan et al., 2009; Hweidi & Al-Hassan, 2005), formal geriatric or gerontological education (Wells et al., 2004), and years of experience (Leung et al., 2011; Liu et al., 2015). None of the sociodemographic variables in this study were significant predictors of attitudes to older patients, with the exception of lacking formal geriatric or gerontological education which was weakly but significantly correlated with having more negative attitudes to older patients.

The predictive capacity of job role. Another aim of this study was to determine the relationship between healthcare professionals' job role and their attitudes to older patients, taking into account sociodemographic variables that demonstrated statistically significant correlation coefficients in the previous analysis (i.e. formal geriatric or gerontological education). No hypothesis was stated as the research on the predictive capacity of job role was exploratory given the limited amount of previous research and the conflicting findings of this earlier research (Wells et al., 2004; Kearney et al., 2000; Liu, Norman, & While, 2013).

The finding that job role was predictive of attitudes to older patients and that within this model, being a physician was significantly correlated with having more negative attitudes to older patients, is noteworthy. From the perspective of relational ageism theory, this is a logical finding given that healthcare professionals are socialized according to the norms and rules of their particular profession (in other words, their job role) (Clark, 1997). With regard to aging and older patients, this socialization constitutes a microcosm of the master cultural narrative on aging

and it is therefore conceivable that the norms and rules of different healthcare professions differ with regard to the treatment of older patients, particularly with regard to an emphasis on curing versus caring for them (Taylor, 2011). As previously discussed, physicians have both professional education and also on-the-job professional socialization that are particularly bio-medical in focus and emphasis (Higashi et al., 2012; Ouchida & Lachs, 2015), and they typically receive very limited amounts of training on aging unless they specialize in geriatrics (Leipzig, Granville, Simpson, Anderson, Sauvigné, & Soriano, 2009).

However, there may be other explanations for this finding. For instance, it is possible that this finding might be related to the type of encounters or treatments physicians are typically involved in with older patients. For instance, it may be the case that, given their higher level of training, physicians more often interact with the sickest and/or frailest older patients as compared to other healthcare professionals as their expertise is called upon in taking an overview of the management of complex medical problems among older patients (Osborn, Moulds, Schneider, Doty, Squires & Sarnak, 2015). If this is, in fact, the case, then physicians' more intense exposure to a relatively homogeneous subset of vulnerable and ill older patients who do not reflect the broad heterogeneity of older patients as a whole may lead to more negative attitudes to older patients who are generally seen as problematic to treat (Koder & Helmes, 2008).

Further research is merited in order to better understand this finding and to seek to replicate it in a larger and representative sample, given that the number of physicians in this sample was small (n = 10). Bearing in mind this caveat, the finding has potentially important implications for the training and professional socialization not only of physicians but also other healthcare professions, as well as for their on-going training and education on the job. Developing a better understanding of how different healthcare disciplines prepare, professionally

socialize, and support their members with regard to serving older patients may be important to reducing negative attitudes and sharing best practices in providing healthcare services that are not biased by the patient's age.

The predictive capacity of work setting. A further aim of this study was to determine the relationship between healthcare professionals' work setting and their attitudes to older patients, taking into account sociodemographic variables that demonstrated statistically significant correlation coefficients in the previous analysis (i.e. formal geriatric or gerontological education). According to relational ageism theory, the work setting of healthcare professionals is a meso level variable (i.e. acting at the organizational level) that may be influencing the attitudes of healthcare professionals toward older patients. The theory of relational ageism postulates that the work setting (i.e. institutional level) will be constituted and influenced, at least in part, by the formation of negative narratives about older patients that stem from negative cultural narratives about older people existing at the macro (i.e. societal) level (Gendron et al., 2017).

The finding of this study that work setting did not add predictive capability to the model of formal geriatric or gerontological education and job role to explain attitudes to older patients ran counter to the hypothesis based on relational ageism theory. While the study was powered sufficiently to detect a medium or large effect, there were quite a small number of cases in the sample working within certain settings (for instance the emergency department $n = 14$ and the intensive care unit $n = 6$). Given the limitations of the sample it is recommended that work setting be further investigated with a more robust sample in order to verify that there are, in fact, no significant differences in attitudes to older patients based on different work settings. Other studies have highlighted the risks of healthcare professionals in certain work settings of seeing older patients as burdensome, due to the perceived pressures they place on scarce organizational

resources in work settings (Ekdahl et al., 2012; Liu et al., 2015). This may be especially the case in acute care work settings (Samra et al., 2012), and within the most highly pressured acute care settings like the intensive care unit (Brandberg et al., 2013) and the emergency department (Deasey et al., 2014). Thus, continued research is warranted.

The study finding that there was no correlation between working in a long-term care setting and attitudes to older patients is also worthy of some comment. The finding, although not statistically significant, was in the opposite direction predicted. While long-term care settings may be at greater risk of being impoverished environments (Brown et al., 2008, p.89; "The Myth of Improved Quality in Nursing Home Care", 2014), they may also present unique conditions in which healthcare professionals are able to develop more positive attitudes to older individuals. Given their day-to-day involvement in providing care to the same individuals over an extended time period, healthcare professionals in long-term care settings may be afforded the opportunity to develop affective connections with the older adults they serve (Ball et al., 2009). It is also possible that the long-term care settings in this study sample were not at risk for impoverished environments either culturally or practically speaking, in terms of poor standards of care and negative attitudes toward older patients (Brown et al., 2008). Thus, further study is warranted in a larger, more representative sample to better understand the conditions in which a long-term care setting, or any other healthcare setting for that matter, may be influential on attitudes toward older patients. This is particularly the case as the attitudes of healthcare professionals toward long-term care residents has received only limited research attention (Hummert, Shaner, Gartska & Henry, 1998; Zimmerman et al, 2014; Dobbs et al., 2008). Future research in this area may benefit from a mixed methods approach. The combination of qualitative with quantitative inquiry

may be particularly helpful in developing a more robust understanding of whether work setting does or does not exert an influence on the attitudes of healthcare professionals to older patients.

The predictive capacity of aging anxiety. Another aim of this study was to determine the relationship between healthcare professionals' personal aging anxiety and their attitudes to older patients, taking into account sociodemographic variables, including gender, age, race, ethnicity, education, geriatric or gerontological training, and years of experience, job role, and work setting. Aging anxiety is a multidimensional construct that is characterized by an anxious mental state arising from both misconceptions and legitimate concerns about anticipated changes and losses as a result of the aging process (Lasher & Faulkender, 1993; Watkins, Coates, & Ferroni, 1998; Yan, Silverstein, & Wilber, 2011). In previous studies aging anxiety has been shown to be negatively correlated with an individual's ability to empathize and express compassion for older adults (Bergman & Bodner, 2015) and positively correlated with negative attitudes to older patients (Liu et al., 2015), as well as mediating the relationship between job satisfaction and career commitment among those working with older adults (Gendron, Welleford, Pelco, & Myers, 2014).

In this study, there were numerous significant bivariate correlations between attitudes to older patients and aging anxiety, including overall aging anxiety score, fear of old people psychological concerns, and concerns about physical appearance. Although it is not possible to discern from this correlational research design what the direction of this relationship is, it is clear that there is a relationship between feeling anxiety about one's own aging, fearing older people, and having more negative attitudes to older patients. It is possible that this is because healthcare professionals are exposed during their careers to a homogeneous subset of largely sick and frail older adults, and therefore have relatively few opportunities to be exposed to the more

heterogeneous population of older adults as a reference point. This fear may be the result of, or the cause of, these more negative attitudes, or it may be a bi-directional relationship.

The addition of aging anxiety to the model predicting attitudes to older patients also led to a statistically significant increase demonstrating that the level of personal aging anxiety experienced by healthcare professionals is an important predictor of attitudes toward older patients. These findings lend weight to the theory of relational ageism, which predicts that the ageism internalized by healthcare professionals will be enacted through their practice as healthcare providers in the form of negative attitudes toward older patients. This finding is also critical to understanding how to best educate the healthcare workforce about ageism. The study findings argue for the inclusion of opportunities for introspection into personal attitudes to aging and aging anxiety among healthcare professionals as a starting point for improving their attitudes to older patients. The study findings support the position that diversity training for healthcare professionals should include an exploration of one's internalized attitudes about oneself as an aging person, as well as developing understanding that these internalized attitudes about self may influence one's attitudes to older patients. Without this dimension of understanding about the link between personal aging anxiety and negative attitudes to older patients, it is possible that workforce training and education on reducing age bias among healthcare professionals may be less effective than intended or desired.

The moderating effect of job role and work setting. The final aim of the study was to explore if the independent variables of job role and work setting moderate the relationship between personal aging anxiety and attitudes to older patients. The study findings did not support a moderating role for the variables of job role and work setting on the relationship between aging anxiety and attitudes to older patients. This finding can be used in support of developing health

professional workforce training on ageism which can be delivered across disciplines and work settings, as it appears that the most critical factor is actually the healthcare professional's own level of aging anxiety. This means that separate workforce education and training need not necessarily be crafted for different disciplines and work settings, resulting in a more cost-efficient approach for healthcare employers who can develop ageism training modules that can be used in a variety of settings and with a variety of healthcare professionals.

Limitations

This study has a number of limitations to note. The survey was issued electronically and also presented at a leadership conference within the healthcare system that provided the research setting. Although the healthcare professionals who attended the leadership conference were asked not to complete the survey if they had already completed it online, it is possible that there could have been duplicates. Some healthcare professionals may have forwarded the link to other colleagues in the healthcare system who were not identified in the inclusion criteria (i.e. who were not working in Community Health Network 1 or 2). The survey did not contain a question asking respondents to confirm their CHN so it is unknown if this actually occurred. For these reasons, it was not possible to calculate a response rate for the study.

The sample used in this study was a convenience sample of healthcare professionals working a regional healthcare system and was representative neither of that health system nor of the healthcare workforce nationally. This presents a limitation of the study. Clinicians are notoriously difficult to study, so studies using them as subjects do tend to have lower response rates (Cook, Dickinson, & Eccles, 2009). Physicians were particularly under-represented in this study, as were men, and people from racial and ethnic minority groups.

Self-selection bias is another limitation of this study as it may be that healthcare professionals who were most interested in this area of research were the ones who responded. In any case, the lack of a representative sample limits the generalizability of the study results. Self-response bias, particularly social desirability bias, is a limitation of this study given that respondents may have been tempted to answer questions in a way they believed would cast them in a more positive light and no social validation instrument was used to detect this. Situational contaminants may also have influenced the way respondents answered the survey questions given that respondents received the survey through their work email in often busy, patient-facing environments where time is under pressure.

Statistical conclusion validity is also a limitation of this study, as although it was sufficient powered overall to detect medium to large effects, some of the group sizes were small (for instance physician job role $n = 10$; emergency department work setting $n = 14$) and when small job role categories were combined with small work setting categories this limitation increased significantly. Furthermore, the correlational research design does not enable an understanding of the direction of relationships where they were shown to exist and therefore it is not possible to identify any causality in these relationships.

Conclusions

This study makes a number of important contributions to understanding ageism in healthcare. Firstly, the study focused on an influential professional group that is under-represented in research – the population of healthcare professionals. Practicing healthcare professionals are in a potentially powerful position. They influence not only patient interactions, but interactions with colleagues also. Experienced healthcare professionals likely act as standard setters and role models for trainee and recently graduated healthcare professionals. Thus, their

attitudes and beliefs about older patients matter. Therefore, how healthcare professionals are socialized within their job roles (i.e. within their disciplines) matters, especially with regard to their understanding of aging through a gerontological lens as a holistic bio-psycho-social-spiritual process as opposed to simply a single story of biomedical decline, as seen through a geriatric lens. The findings with regard to job role can therefore be used to inform the way various healthcare professionals are trained and socialized within their disciplines in order to promote a more holistic and less biomedical view of aging.

The lack of findings with regard to work setting still make an intriguing invitation to future researchers to further explore the possible influence of this variable on attitudes to older patients, using larger and more representative samples, or to verify that work setting is not influential on attitudes to older patients. This is potentially important, as healthcare professionals work within systems and those systems may be influential in shaping the nature of the encounters that they have with older patients. In other words, there may be other forces at work in shaping a healthcare professional's attitudes to older patients beyond the extent to which their training and socialization within their discipline are biomedically based, and beyond their general socialization as citizens within a pervasively ageist society.

The study also took a novel approach to the variable of aging anxiety, using it as a predictor rather than an outcome variable. This is the first study known to correlate aging anxiety with attitudes to older patients using the Aging Anxiety Scale and the Geriatric Attitudes Scale. The study findings can be used to design workforce education and training programs that address the influence of personal aging anxiety on attitudes to older patients by including a component of this education that addresses healthcare professionals' internalized discomfort with their own aging. Without this added dimension of understanding how one's personal aging anxiety may

influence one's attitudes to older patients, healthcare employers risk missing a key component of what may make such training effective.

In total, the study findings make a significant contribution both to the literature on ageism in healthcare and among healthcare professionals and to shaping best practices in freeing healthcare professionals and patients alike from the damaging consequences of negative attitudes to aging.

References

Administration on Aging Administration for Community Living U.S. Department of Health and Human Services. (2015). *A profile of older americans: 2015.* Washington, D.C.: Administration on Aging Administration for Community Living U.S. Department of Health and Human Services.

Album, D., & Westin, S. (2008). Do diseases have a prestige hierarchy? A survey among physicians and medical students. Social Science and Medicine, 66: 182-188.

Alkema, G.E., & Alley, D.E. (2006). Gerontology's future: An integrative model for disciplinary advancement. *The Gerontologist , 46*, 574-582.

Allen, J. O. (2016). Ageism as a risk factor for chronic disease. *The Gerontologist, 56*(4), 610-614. doi:10.1093/geront/gnu158 [doi].

Allen, P. D., Cherry, K. E., & Palmore, E. (2009). Self-reported ageism in social work practitioners and students. *Journal of Gerontological Social Work, 52*(2), 124-134. doi:10.1080/01634370802561927 [doi].

Alliance for Aging Research (2003). Ageism: How Health Care Fails the Elderly. Washington, D.C.: Alliance for Aging Research

an Zuilen, M (2015). Critical synthesis package: UCLA geriatrics attitudes scale. MedEdPORTAL Publications, 11(10096), retrieved from http://dx.doi.org/10.15766/mep_2374-8265.10096.

Axt, J. R., Ebersole, C. R., & Nosek, B. A. (2014). The rules of implicit evaluation by race, religion, and age. *Psychological Science, 25*(9), 1804-1815.

Ball, M. M., Lepore, M. L., Perkins, M. M., Hollingsworth, C., & Sweatman, M. (2009). "They are the reason I come to work": The meaning of resident–staff relationships in assisted living. *Journal of Aging Studies, 23*(1), 37-47. doi:http://dx.doi.org/10.1016/j.jaging.2007.09.006

Baltes, P. B. (1987). Theoretical propositions of lifespan developmental psychology: On the dynamics between growth and decline. *Developmental Psychology*, 23, 611-626.

Bergman, Y. S., & Bodner, E. (2015). Ageist attitudes block young adults' ability for compassion toward incapacitated older adults. *International Psychogeriatrics, 27*(9), 1541-1550. doi:10.1017/S1041610215000198 [doi].

Blackwood, J., & Sweet, C. (2015). The influence of ageism, experience, and relationships with older adults on physical therapy student's perception of geriatrics. *Gerontology & Geriatrics Education,*doi:10.1080/02701960.2015.1079709 [doi].

Brandberg, C., Blomqvist, H., & Jirwe, M. (2013). What is the importance of age on treatment of the elderly in the intensive care unit? *Acta Anaesthesiologica Scandinavica, 57*(6), 698-703. doi:10.1111/aas.12073.

Brown, J., Nolan, M., Davies, S., Nolan, J., & Keady, J. (2008). Transforming students' views of gerontological nursing: Realising the potential of 'enriched' environments of learning and care: A multi-method longitudinal study. *International Journal of Nursing Studies, 45*(8), 1214-1232. doi:S0020-7489(07)00165-4 [pii].

Brunton, R. J., & Scott, G. (2015). Do we fear ageing? A multidimensional approach to ageing anxiety. *Educational Gerontology, 41*(11), 786-799 14p. doi:10.1080/03601277.2015.1050870

Butler, R. N. (1969). Ageism: Another form of bigotry. *The Gerontologist*, 9(4), 243-246.

Butler, R.N. (1975). *Why survive? Being old in America.* New York: Harper and Row.

Butler, R.N. (2005). Ageism: Looking back over my shoulder. *Generations*, 29(3), 84-86.

Center for Medicare Advocacy (2014). *The Myth of improved quality in nursing home care: Setting the record straight again.* Retrieved from http://www.medicareadvocacy.org/the-myth-of-improved-quality-in-nursing-home-care-setting-the-record-straight-again/

Chonody, J. M. (2015). Addressing ageism in students: A systematic review of the pedagogical intervention literature. *Educational Gerontology,* doi:10.1080/03601277.2015.1059139.

Chonody, J.M. & Teater, B. (2016). Why do I dread looking old?: A test of social identity theory, terror management theory, and the double standard of aging, *Journal of Women & Aging*, 28:2, 112-126, DOI: 10.1080/08952841.2014.950533.

Chonody, J. M., & Wang, D. (2014). Predicting social work students' interest in gerontology: Results from an international sample. *Journal of Gerontological Social Work, 57*(8), 773-789. doi:10.1080/01634372.2014.888605 [doi].

Clarke, A.E, & Shim, J. (2011). Medicalization and biomedicalization revisited: Technoscience and transformation of health, illness and American medicine. In B.A. Pescosolido (Ed.), *Handbook of the sociology of health, illness, and healing: a blueprint for the 21st century* (2011), pp. 173–200.

Clarke, A. E., Shim, J. K., Mamo, L., Fosket, J. R., & Fishman, J. R. (2003). Biomedicalization: Technoscientific transformations of health, illness, and U.S. biomedicine. *American Sociological Review, 68*(2), 161-194.

Clarke, P.G. (1997). Values in health care professional socialization: Implications for geriatric education in interdisciplinary teamwork. *The Gerontologist*, 37(4), 441-451.

Cohen, J., Cohen, P., West, S.G., & Aiken L.S. (2003). Applied multiple regression/correlation analysis for the behavioral sciences (3rd ed.). Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.

Colby, S.L., & Ortman, J.M. (2014). *Projections of the size and composition of the U.S. population: 2014 to 2060* (Current Population Reports, P25-1143). Washington, D.C: U.S. Census Bureau.

Cook, J.V., Dickinson, H.O., & Eccles, M.P. (2009). Response rates in postal surveys of healthcare professionals between 1996 and 2005: An observational study. *BMC Health Services Research*, 9(160), 1-8, doi:10.1186/1472-6963-9-160.

Coudin, G., & Alexopoulos, T. (2010). 'Help me! I'm old!' how negative aging stereotypes create dependency among older adults. *Aging & Mental Health, 14*(5), 516-523. doi:10.1080/13607861003713182

Cuddy, A. J. C., & Fiske, S. T. (2002). Doddering but dear: Process, content, and function in stereotyping of older persons. In T. D. Nelson (Ed.), *Ageism: Stereotyping and prejudice against older persons* (pp. 2-26). Cambridge, Massachusetts: The MIT Press.

Dahlke, S. & Phinney, A. (2008). Caring for hospitalized older adults at risk for delirium. *Journal of Gerontological Nursing*, 34(6), 41-47.

Davis, M. M., Bond, L. A., Howard, A., & Sarkisian, C. A. (2011). Primary care clinician expectations regarding aging. *The Gerontologist, 51*(6), 856-866. doi:10.1093/geront/gnr017 [doi].

De Medeiros, K. (2005). The complementary self: Multiple perspectives on the aging person. *Journal of Aging Studies*, 19, 1–13.

Deasey, D., Kable, A., & Jeong, S. (2014). Influence of nurses' knowledge of ageing and attitudes towards older people on therapeutic interactions in emergency care: A literature review. *Australasian Journal on Ageing, 33*(4), 229-236. doi:10.1111/ajag.12169 [doi].

Dick, H.V. (2014). "Every time you deal with a death you think, 'one day'…"; The emotional and spiritual effects of dealing with aging, dying, and death for staff in a residential aged care facility. *Journal of Religion, Spirituality, and Aging*, 26, 173-185.

Dobbs, D., Eckert, J. K., Rubinstein, B., Keimig, L., Clark, L., Frankowski, A. C., & Zimmerman, S. (2008). An ethnographic study of stigma and ageism in residential care or assisted living. *The Gerontologist*, *48*(4), 517-526. doi:10.1093/geront/48.4.517.

Durning, S. J., Artino, A. R., Holmboe, E., Beckman, T. J., van der Vleuten, C., & Schuwirth, L. (2010). Aging and cognitive performance: challenges and implications for physicians practicing in the 21st century. *Journal of Continuing Education in the Health Professions*, *30*(3), 153-160.

Eagly, A. & Chaiken, S. (1993). *The psychology of attitudes*. Fort Worth, TX: Harcourt Brace.

Ekdahl, A. W., Hellström, I., Andersson, L., & Friedrichsen, M. (2012). Too complex and time-consuming to fit in! Physicians' experiences of elderly patients and their participation in medical decision making: A grounded theory study. *BMJ Open, 2*(3), 10.1136/bmjopen-2012-001063. Print 2012. doi:10.1136/bmjopen-2012-001063 [doi].

Estes, C. L., & Binney, E. A. (1989). The biomedicalization of aging: Dangers and dilemmas. *The Gerontologist, 29*(5), 587-596.

Eymard, A.S. & Douglas, D.H. (2012). Ageism among health care providers and interventions to improve their attitudes toward older adults. *The Journal of Gerontological Nursing*, 38(5), 26-35.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. (2014). *G*Power 3.1 manual.* Retrieved from: http://www.gpower.hhu.de/fileadmin/redaktion/Fakultaeten/Mathematisch-Naturwissenschaftliche_Fakultaet/Psychologie/AAP/gpower/GPowerManual.pdf

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavioral Research Methods*, 41, 1149-1160.

Field, T., Cadoret, C., Brown, M., Ford, M., Greene, S., Hill, D., Hornbrook, M., …Zapka, J. (2002). Surveying physicians: do components of the "Total Design Approach" to optimizing survey response rates apply to physicians? *Medical Care*, 40,596-605.

Furlan, J. C., Craven, B. C., Ritchie, R., Coukos, L., & Fehlings, M. G. (2009). Attitudes towards the older patients with spinal cord injury among registered nurses: A cross sectional observational study. *Spinal Cord, 47*(August), 674-680.

Furlan, J. C., & Fehlings, M. G. (2009). Attitudes toward the elderly with CNS trauma: A cross-sectional study of neuroscientists, clinicians, and allied-health professionals. *Journal of Neurotrauma, 26*(2), 209-225. doi:10.1089/neu.2008.0663 [doi]

Gallagher, S., Bennett, K.M., & Halford, J.C.G. (2005). A comparison of acute and long-term health-care personnel's attitudes towards older adults. *International Journal of Nursing Practice*, 12(5), 273-279.

Gendron, T, Welleford, E.A., Inker, J., & White, J.T. (2016). The language of ageism. Why we need to choose words carefully. *The Gerontologist,* 56(6), 997-1006.

Gendron, T., Inker, J., & Welleford, E.A. (2017). A Theory of Relational Ageism: A Discourse Analysis of the 2015 White House Conference on Aging. *The Gerontologist* doi:10.1093/geront/gnw155.

Gendron, T., Welleford, E. A., Pelco, L., & Myers, B. J. (2016). Who is likely to commit to a career with older adults? *Gerontology & Geriatrics Education, 37*(2), 208-228. doi:10.1080/02701960.2014.954042 [doi].

Gething, L., Fethney, J., McKee, K., Goff, M., Churchward, M., & Matthews, S. (2002). Knowledge, stereotyping and attitudes towards self ageing. *Australasian Journal on Ageing, 21*(2), 74-79.

Giles, L.C., Paterson, J.E., Butler, S.J. & Stewart, J.J. (2002). Ageism among health professionals: A comparison of clinical educators and students in physical and occupational therapy, *Physical and Occupational Therapy In Geriatrics,* 21(2), 15-26, doi: 10.1080/J148v21n02_02.

Golden, A. G., Gammonley, D., Hunt, D., Olsen, E., & Issenberg, S. B. (2014). The attitudes of graduate healthcare students toward older adults, personal aging, health care reform, and interprofessional collaboration. *Journal of Interprofessional Care, 28*(1), 40-44. doi:10.3109/13561820.2013.830595 [doi].

Grant, L. D. (1996). Effects of ageism on individual and health care providers' responses to healthy aging. *Health & Social Work, 21*(1), 9-15.

Gunderson, A., Tomkowiak, J., Menachemi, N., & Brooks, R. (2005). Rural physicians' attitudes toward the elderly: Evidence of ageism? *Quality Management in Health Care*, 14(3), 167-176.

Harris, P.A., Taylor, R., Thielke, R., Payne, J., Gonzalez, N., Conde, J.G. (2009). Research electronic data capture (REDCap) - A metadata-driven methodology and workflow process for providing translational research informatics support, *Journal of Biomedical Informatics*, 42(2), 377-81.

Helton, M. R., & Pathman, D. E. (2008). Caring for older patients: Current attitudes and future plans of family medicine residents. *Family Medicine, 40*(10), 707-714.

Higashi, R. T., Tillack, A. A., Steinman, M., Harper, M., & Johnston, C. B. (2012). Elder care as "frustrating" and "boring": Understanding the persistence of negative attitudes toward older patients among physicians-in-training. *Journal of Aging Studies, 26*(4), 476-483. doi:http://dx.doi.org/10.1016/j.jaging.2012.06.007.

Higgins, I., Slater, L., Van der Riet, P., & Peek, C. (2007). The negative attitudes of nurses toward older patients in the acute hospital setting: A qualitative descriptive study. *Contemporary Nurse: A Journal for the Australian Nursing Profession, 26*(2), 225-237. doi:10.5172/conu.2007.26.2.225.

Hope, K. W. (1994). Nurses' attitudes towards older people: A comparison between nurses working in acute medical and acute care of elderly patient settings. *Journal of Advanced Nursing, 20*(4), 605-612.

Hulley, S.B., Cummings, S.R., Browner, W.S., Grady, D.G., & Newman, T.B. (2013). *Designing clinical research* (4th ed.). Philadelphia, PA: Wolters Kluwer | Lippincott Williams & Wilkins.

Hummert, M.L., Shaner, J.L., Garstka, T.A., & Henry, C. (1998). Communication with older adults: The influence of age stereotypes, context, and communicator age. *Human Communication Research*, 25, 124-151.

Hweidi, I.M. & Al-Hassan, M.A. (2005). Jordanian nurses' attitudes toward older patients in acute care settings. *International Nursing Review*, 52, 225-232.

Institute of Medicine Committee on the Future Health Care Workforce for Older Americans. (2008). Retooling for an aging America: Building the health care workforce. Washington, D.C.: National Academy of Sciences.

Iversen, T. N., Larsen, L., & Solem, P. E. (2009). A conceptual analysis of ageism. *Nordic Psychology, 61*(3), 4-22. doi:10.1027/1901-2276.61.3.4

Kagan, S. H., & Melendez-Torres, G. J. (2015). Ageism in nursing. *Journal of Nursing Management*, *23*(5), 644-650. doi:10.1111/jonm.12191 [doi].

Kane, R. L., & Kane, R. A. (2005). Ageism in healthcare and long-term care. *Generations, 29*(3), 49-54.

Kaufman, S. R., Shim, J. K., & Russ, A. J. (2004). Revisiting the biomedicalization of aging: Clinical trends and ethical challenges. *The Gerontologist, 44*(6), 731-738. doi:44/6/731 [pii].

Kearney, N., Miller, M., Paul, J., & Smith, K. (2000). Oncology healthcare professionals' attitudes towards elderly people. *Annals of Oncology*, 11(5), 599-601.

Kellerman, S. & Herold, J. (2001). Physician response to surveys. A review of the literature. *American Journal of Preventative Medicine*, 20, 61-67.

Kite, M. E., & Wagner, L. S. (2002). Attitudes toward older adults. In T. D. Nelson (Ed.), *Ageism: Stereotyping and prejudice against older persons* (pp. 129-162). Cambridge, MA: The MIT Press.

Klein, J., & Liu, L. (2010). Ageism in current practice: Experiences of occupational therapists. *Physical & Occupational Therapy in Geriatrics, 28*(4), 334-347. doi:10.3109/02703181.2010.532904.

Koder, D., & Helmes, E. (2008). Predictors of working with older adults in an australian psychologist sample: Revisiting the influence of contact. *Professional Psychology: Research and Practice, 39*(3), 276-282. doi:10.1037/0735-7028.39.3.276.

Kotter-Grühn, D., & Hess, T. M. (2012). The impact of age stereotypes on self-perceptions of aging across the adult lifespan. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 67*(5), 563-571. doi:10.1093/geronb/gbr153.

Koukouli, S., Pattakou-Parasyri, V., & Kalaitzaki, A. E. (2014). Self-reported aging anxiety in Greek students, health care professionals, and community residents: A comparative study. *Gerontologist, 54*(2), 201-210 10p. doi:geront/gnt036.

Krain, L. P., Fitzgerald, J. T., Halter, J. B., & Williams, B. C. (2007). Geriatrics attitudes and knowledge among surgical and medical subspecialty house officers. *Journal of the American Geriatrics Society, 55*(12), 2056-2060. doi:JGS1475 [pii].

Krauss Whitbourne, S., & Sneed, J. R. (2002). The paradox of well-being, identity processes, and stereotype threat: Ageism and its potential relationships to the self in later-life. In T. D. Nelson (Ed.), *Ageism: Stereotyping and prejudice against older persons* (pp. 247-276). Cambridge, MA: The MIT Press.

Laerd Statistics (2015). Multiple regression using SPSS Statistics. Statistical tutorials and software guides. Retrieved from https://statistics.laerd.com/.

Lasher, K. P., & Faulkender, P. J. (1993). Measurement of aging anxiety: Development of the anxiety about aging scale. *International Journal of Aging & Human Development, 37*(4), 247-259.

Lee, M., Reuben, D. B., & Ferrell, B. A. (2005). Multidimensional attitudes of medical residents and geriatrics fellows toward older people. *Journal of the American Geriatrics Society, 53*(3), 489-494. doi:JGS53170 [pii].

Leipzig, R.M., Granville, L., Simpson, D., Anderson, M.B., Sauvigné, K., Soriano, R. (2009). Keeping Granny Safe on July 1: A Consensus on Minimum Geriatrics Competencies for Graduating Medical Students. *Academic Medicine*, 84(5), 604-610.

Levy, B. R., & Banaji, M. R. (2002). Implicit ageism. In T. D. Nelson (Ed.), *Ageism: Stereotyping and prejudice against older persons* (pp. 49-76). Cambridge, MA: The MIT Press.

Levy, B. R., & Myers, L.M. (2005). Relationship between respiratory mortality and self-perceptions of aging. *Psychology & Health*, 20 (5), 553–564. doi:10.1080/14768320500066381.

Levy, B. R., Slade, M. D., May, J., & Caracciolo, E. A. (2006). Physical recovery after acute myocardial infarction: Positive age self-stereotypes as a resource. *International Journal of Aging & Human Development*, 62 (4), 285–301. doi:10.2190/ejk1-1q0d-lhge-7a35.

Liu, Y. E., Norman, I. J., & While, A. E. (2015). Nurses' attitudes towards older people and working with older patients: An explanatory model. *Journal of Nursing Management, 23*(8), 965-973. doi:10.1111/jonm.12242 [doi].

Liu, Y. E., Norman, I. J., & While, A. E. (2013). Nurses' attitudes toward older people: A systematic review. *International Journal of Nursing Studies, 50*(9), 1271-1282. doi:10.1016/j.ijnurstu.2012.11.021 [doi].

Liu, Y. E., While, A. E., Norman, I. J., & Ye, W. (2012). Health professionals' attitudes toward older people and older patients: A systematic review. *Journal of Interprofessional Care, 26*(5), 397-409. doi:10.3109/13561820.2012.702146 [doi].

Lojun, S. L., Sauper, C. J., Medow, M., Long, W. J., Mark, R. G., & Barzilay, R. (2010). Investigating resuscitation code assignment in the intensive care unit using structured and unstructured data. *AMIA ...Annual Symposium Proceedings / AMIA Symposium. AMIA Symposium, 2010*, 467-471.

Lookinland, S., & Anson, K. (1995). Perpetuation of ageist attitudes among present and future health care personnel: Implications for elder care. *Journal of Advanced Nursing, 21*(1), 47-56.

Lynch, S. M. (2000). Measurement and prediction of aging anxiety. *Research on Aging,* 22(5), 533.

McGowan, T.G. (1996). Ageism and Discrimination. In V.W. Marshall, T.R. Cole, A. Svanborg, E.J. Masoro, K.W. Schaie & J.E. Birren (Eds.), *Encyclopedia of Gerontology: Age, Aging, and the Aged* (pp. 71-80). San Diego, CA: Academic Press.

Meiboom, A. A., de Vries, H., Hertogh, C. M., & Scheele, F. (2015). Why medical students do not choose a career in geriatrics: A systematic review. *BMC Medical Education, 15*, 101-015-0384-4. doi:10.1186/s12909-015-0384-4 [doi].

Meisner, B. A. (2012). Physicians' attitudes toward aging, the aged, and the provision of geriatric care: A systematic narrative review. *Critical Public Health, 22*(1), 61-72.

Mellor, P., Chew, D., & Greenhill, J. (2007). Nurses' attitudes toward elderly people and knowledge of gerontic care in a multi-purpose health service (MPHS). *Australian Journal of Advanced Nursing, 24*(4), 37.

Myers, H., Nikoletti, S., & Hill, A. (2001). Nurses' use of restraints and their attitudes toward restraint use and the elderly in an acute care setting. *Nursing & Health Sciences, 3*(1), 29-34.

Nelson, T.D. (2005). Ageism: prejudice against our feared future self. *Journal of Social Issues*, 61(2), 207-221.

Nelson, T.D. (ed.) (2002). *Ageism: Stereotyping and prejudice against older persons*. Cambridge, MA: The MIT Press.

Noonan, A., Lindong, I., & Jaitley, V. (2013). The role of historically black colleges and universities in training the health care workforce, *American Journal of Public Health* 103(3), 412-415.

Nordam, A., Torjuul, K. & Sørlie, V. (2005). Ethical challenges in the care of older people and risk of being burned out among male nurses. *Journal of Clinical Nursing*, 14. 1248-1256.

Osborn, R., Moulds, D., Schneider, E.C., Doty, M.M., Squires, D., & Sarnak, D.O. (2015). Primary care physicians in ten countries report challenges caring for patients with complex health needs. *Health Affairs*, 34(12), 2104-2112.

Ouchida, K. M., & Lachs, M. S. (2015). Not for doctors only: Ageism in healthcare. *Generations, 39*(3), 46-57.

Palmore, E. (1999). Ageism: Negative and positive (2nd ed.). New York, NY: Springer.

Palmore, E.B., Branch, L., & Harris, D. (2005). *Encyclopedia of Ageism*, New York, NY: Haworth Pastoral Press.

Peek, M.E., Wilson, S.C., Bussey-Jones, J., Lypson, M., Cordasco, K., Jacobs, E.A., Bright, C., Brown, A.F. (2012). A Study of national physician organizations' efforts to reduce racial and ethnic health disparities in the United States," Academic Medicine 87(6), 694-700.

Pettigrew, T. F. (2016). In pursuit of three theories: Authoritarianism, relative deprivation, and intergroup contact. *Annual Review of Psychology*, *67*, 1-21. doi:10.1146/annurev-psych-122414-033327 [doi].

Polit, D. F., & Beck, C. T. (2012). *Nursing research: Generating and assessing evidence for nursing practice* (9th ed.). Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins.

Reuben, D. B., Lee, M., Davis, J. W., Eslami, M. S., Osterweil, D. G., Melchiore, S., & Weintraub, N. T. (1998). Development and validation of a geriatrics attitudes scale for primary care residents. *Journal of the American Geriatrics Society*, *46*(11), 1425-1430.

Reyna, C., Goodwin, E. J., & Ferrari, J. R. (2007). Older adult stereotypes among care providers in residential care facilities. *Journal of Gerontological Nursing, 33*(2), 50-55. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,url,cookie,uid&db=ccm&AN=2009500808&site=ehost-live&scope=site

Robinson, S., Briggs, R., & O'Neill, D. (2012). Cognitive aging, geriatrics textbooks, and unintentional ageism. *Journal of the American Geriatrics Society, 60*(11), 2183-2185. doi:10.1111/j.1532-5415.2012.04217.x [doi].

Rogers, S., Thrasher, A.D., Miao, Y., Boscardin, W.J., Smith, A.K. (2015). Discrimination in healthcare settings is associated with disability in older adults: Health and retirement study, 2008–2012. *Journal of General Internal Medicine*, 30(10), 1413-1420.

Rosenberg, M.J. & Hovland, C.I. (1960). Cognitive, affective, and behavioral components of attitudes. In C. Hovland & M.J. Rosenberg (eds.), Attitude organization and change, New Haven: Yale University Press.

Samra, R., Griffiths, A., Cox, T., Conroy, S., Gordon, A., & Gladman, J. R. (2015). Medical students' and doctors' attitudes toward older patients and their care in hospital settings: A conceptualisation. *Age and Ageing, 44*(5), 776-783. doi:10.1093/ageing/afv082 [doi].

Sargent-Cox, K., Rippon, M., & Burns, R. A. (2014). Measuring anxiety about aging across the adult lifespan. *International Psychogeriatrics, 26*(1), 135-145 11p. doi:10.1017/S1041610213001798

Scheinthal, S., Gross, C., & Morales-Egizi, L. (2015). Appendix 2: AOA speciality board certification. Certification statistics as of December 2014. *The Journal of the American Osteopathic Association*, 114(4), 275-278.

Schroyen, S., Missotten, P., Jerusalem, G., Gilles, C., & Adam, S. (2015). Ageism and caring attitudes among nurses in oncology. *International Psychogeriatrics / IPA,* 1-9. doi:S1041610215001970 [pii].

Schiller Schigelone, A. R. (2003). How can we ignore the why? A theoretical approach to health care professionals' attitudes toward older adults. *Journal of Gerontological Social Work, 40*(3), 31-50.

Stypinska, J. & Turek, K. (2017). Hard and soft age discrimination: the dual nature of workplace discrimination. *European Journal of Ageing*, 14(1), 49-61. doi:10.1007/s10433-016-0407-y.

Tabachnick, B. B., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Boston: Pearson Education.

The American Geriatrics Society. (2013). The demand for geriatric care and the evident shortage of geriatrics healthcare providers. Retrieved from http://www.americangeriatrics.org/files/documents/Adv_Resources/demand_for_geriatric_care.pdf.

Threapleton, D. E., Chung, R. Y., Wong, S. Y. S., Wong, E., Chau, P., Woo, J., . . . Yeoh, E. K. (2017). Integrated care for older populations and its implementation facilitators and barriers: A rapid scoping review. *International Journal for Quality in Health Care : Journal of the International Society for Quality in Health Care*, 1-8. doi:10.1093/intqhc/mzx041 [doi].

Tomko, J. K., & Munley, P. H. (2013). Predicting counseling psychologists attitudes and clinical judgments with respect to older adults. *Aging & Mental Health, 17*(2), 233-241. doi:10.1080/13607863.2012.715141 [doi].

Treas, J., & Passuth, P. (1988). Age, aging, and the aged: The three sociologies. In E. Borgatta & K. S. Cook (Eds.), *The future of sociology* (pp. 394-417). Newbury Park, CA: Sage and the Pacific Sociological Association.

Ward, B. W., Schiller, J. S., & Goodman, R. A. (2014). Multiple chronic conditions among US adults: A 2012 update. *Preventing Chronic Disease, 11*, E62. doi:10.5888/pcd11.130389 [doi].

Watkins, R. E., Coates, R., & Ferroni, P. (1998). Measurement of aging anxiety in an elderly australian population. *International Journal of Aging & Human Development, 46*(4), 319-332.

Wells, Y., Foreman, P., Gething, L., & Petralia, W. (2004). Multicultural aging. nurses' attitudes toward aging and older adults: Examining attitudes and practices among health services providers in Australia. *Journal of Gerontological Nursing, 30*(9), 5-13.

Wetle, T. (2008). The oldest old: Missed public health opportunities. *American Journal of Public Health, 98*(7), 1159-1159.

Wherry, R. J., Sr. (1984). Contributions to correlational analysis. Orlando, FL: Academic Press.

Whitbourne, S.K. & Hulicka, I.M. (1990). Ageism in undergraduate psychology texts. *American Psychologist*, 45(10), 1127-1136.

Williams, B. O. (2000). Ageism helps to ration medical treatment. *Health Bulletin, 58*(3), 198-202.

Wilson, D. M., Nam, M. A., Murphy, J., Victorino, J. P., Gondim, E. C., & Low, G. (2017). A critical review of published research literature reviews on nursing and healthcare ageism. *Journal of Clinical Nursing,* doi:10.1111/jocn.13803 [doi].

Xu, D., Kane, R. L., Shippee, T., & Lewis, T. M. (2016). Identifying consistent and coherent dimensions of nursing home quality: Exploratory factor analysis of quality indicators. *Journal of the American Geriatrics Society, 64*(12), e259-e264. doi:10.1111/jgs.14562 [doi].

Zimmerman, S., Dobbs, D., Roth, E. G., Goldman, S., Peeples, A. D., & Wallace, B. (2014). Promoting and protecting against stigma in assisted living and nursing homes. *The Gerontologist,* doi:gnu058 [pii].

Appendix A: Pre-survey notice (electronic)

Dear Colleague:

Survey on Healthcare Professionals' Attitudes to Aging

In a few days, you will receive an email from me with an embedded link to a survey on the attitudes of healthcare professionals to aging. This survey is being undertaken by a Virginia Commonwealth University doctoral student with the approval of Riverside Health System.

The survey will be instrumental in guiding all aspects of Riverside's care delivery, including our work force education needs, skill development, and care models to serve the growing older adult population.

When the survey email arrives, please complete it promptly. The survey is anonymous but you will have the option of entering a prize drawing for several Amazon gift cards by supplying your name and contact details at the end of the survey. These *will not* be connected with your survey responses which will remain strictly confidential.

If you have any questions about the survey process, please do not hesitate to contact me (see my contact details below) or the researcher, Jennifer Inker, at: inkerjl@vcu.edu.

We will share a summary of the survey results with all staff in 2018, along with our thoughts about how we can use them to strengthen the delivery of our mission *to care for others as we would care for those we love – to enhance their well-being and improve their health.*

Thank you for your help in advancing this important work.

Sincerely,

Christine Jensen, PhD
Director, Health Services Research
Riverside Center for Excellence in Aging and Lifelong Health

Appendix B: Pre-survey notice (for administrators in long-term care facilities)

Dear Colleague:

Survey on Healthcare Professionals' Attitudes to Aging

In a few days, you will receive an email from me with an embedded link to a survey on the attitudes of healthcare professionals to aging. This survey is being undertaken by a Virginia Commonwealth University doctoral student with the approval of Riverside Health System.

The survey will be instrumental in guiding all aspects of Riverside's care delivery, including our work force education needs, skill development, and care models to serve the growing older population.

When the survey email arrives, please complete it promptly. The survey is anonymous but you will have the option of entering a prize drawing for several Amazon gift cards by supplying your name and contact details at the end of the survey. These *will not* be connected with your survey responses which will remain strictly confidential.

IMPORTANT NOTICE FOR LONG-TERM CARE FACILITY ADMINISTRATORS

As your facility also has some team members who do not have access to corporate email, you will also receive a package through the Inter-Office mail containing paper surveys and sealable, self-addressed envelopes.

Please distribute these paper surveys promptly to all staff who do not have access to corporate email and allow them time to complete the survey. Once completed, staff should place the survey in one of the self-addressed envelopes, seal it and place it in the Inter-Office mail for return to the Riverside Center for Excellence in Aging and Lifelong Health. The sealed envelopes will be collected by the researcher from RCEALH and *will not* be opened by RCEALH.

If you have any questions about the survey process, please do not hesitate to contact me (see my contact details below) or the researcher, Jennifer Inker, at: inkerjl@vcu.edu.

We will share a summary of the survey results with all staff in 2018, along with our thoughts about how we can use them to strengthen the delivery of our mission *to care for others as we would care for those we love – to enhance their well-being and improve their health.*

Thank you for your help in advancing this important work.

Sincerely,

Christine Jensen, PhD Director, Health Services Research
Riverside Center for Excellence in Aging and Lifelong Health

Appendix C: Reminder notice (electronic)

Dear Colleague,

REMINDER NOTICE: Survey on Healthcare Professionals' Attitudes to Aging

Recently you received an email from me with an embedded link to a survey on the attitudes of healthcare professionals to aging. This survey is being undertaken by a Virginia Commonwealth University doctoral student with the approval of Riverside Health System.
The survey will be instrumental in guiding all aspects of Riverside's care delivery, including our work force education needs, skill development, and care models to serve the growing older population.

I urge you to complete the survey as soon as possible. The survey is anonymous but you will have the option of entering a prize drawing for several Amazon gift cards by supplying your name and contact details at the end of the survey. These *will not* be connected with your survey responses which will remain strictly confidential.

If you have any questions about the survey process, please do not hesitate to contact me (see my contact details below) or the researcher, Jennifer Inker, at: inkerjl@vcu.edu.

We will share a summary of the survey results with all staff in 2018, along with our thoughts about how we can use them to strengthen the delivery of our mission *to care for others as we would care for those we love – to enhance their well-being and improve their health.*

Thank you for your help in advancing this important work.

Sincerely,

Christine Jensen, PhD
Director, Health Services Research
Riverside Center for Excellence in Aging and Lifelong Health

Appendix D: Reminder notice (for administrators in long-term care facilities)

Dear Colleague,

REMINDER NOTICE: Survey on Healthcare Professionals' Attitudes to Aging

Recently you received an email from me with an embedded link to a survey on the attitudes of healthcare professionals to aging. This survey is being undertaken by a Virginia Commonwealth University doctoral student with the approval of Riverside Health System.
The survey will be instrumental in guiding all aspects of Riverside's care delivery, including our work force education needs, skill development, and care models to serve the growing older population.

I urge you to complete the survey as soon as possible. The survey is anonymous but you will have the option of entering a prize drawing for several Amazon gift cards by supplying your name and contact details at the end of the survey. These *will not* be connected with your survey responses which will remain strictly confidential.

PLEASE ALSO ENCOURAGE YOUR STAFF TO COMPLETE THE SURVEY

As your facility also has some team members who do not have access to corporate email, you also received a package through the Inter-Office mail containing paper surveys and sealable, self-addressed envelopes.

Please encourage all staff who do not have access to corporate email to complete the survey. Once completed, staff should place the survey in one of the self-addressed envelopes, seal it and place it in the Inter-Office mail for return to the Riverside Center for Excellence in Aging and Lifelong Health. The sealed envelopes will be collected by the researcher from RCEALH and *will not* be opened by RCEALH.

If you have any questions about the survey process, please do not hesitate to contact me (see my contact details below) or the researcher, Jennifer Inker, at: inkerjl@vcu.edu.

We will share a summary of the survey results with all staff in 2018, along with our thoughts about how we can use them to strengthen the delivery of our mission *to care for others as we would care for those we love – to enhance their well-being and improve their health.*

Thank you for your help in advancing this important work.

Sincerely,

Christine Jensen, PhD
Director, Health Services Research
Riverside Center for Excellence in Aging and Lifelong Health

Appendix E

Attitudes toward Aging

You are being invited to participate in a research study about the attitudes of healthcare professionals to aging. This study is being conducted by Jennifer Inker, MBA MS (Gerontology) from the Department of Gerontology at Virginia Commonwealth University *with the approval of Riverside Health System*. There are no known risks if you decide to participate in this research study. There are no costs to you for participating in this study. The questionnaire will take about 15 minutes to complete. This survey is anonymous and no IP addresses will be collected. No one will be able to identify you or your answers, and no one will know whether or not you participated in the study. Should the data be published, no individual information will be disclosed.

If you have any questions or concerns while completing the questionnaires, please do not hesitate to contact Jennifer Inker at inkerjl@vcu.edu.

In the future, you may have questions about your participation in this study. If you have any questions, complaints, or concerns about the research, contact:

Dr Tracey Gendron or Jennifer Inker
Address: Dept of Gerontology
730 E. Broad Street
P. O. Box 980228
Richmond, VA 23298-2018
Phone: (804) 828-1565
E-mail: inkerjl@vcu.edu

If you have any questions about your rights as a participant in this study, you may contact:

Office for Research
Virginia Commonwealth University
800 East Leigh Street, Suite 113
P. O. Box 980568
Richmond, VA 23298
Phone: (804) 827-2157

You may also contact this number for general questions, concerns or complaints about the research. Please call this number if you cannot reach the research team or wish to talk to someone else. Additional information about participation in research studies can be found at Http://www.research.vcu.edu/irb/volunteers.htm.

I have read and fully understand the consent form. I understand that my participation is voluntary and I may stop responding to the survey at any time. By continuing with the questionnaire, I am indicating that I freely and voluntarily agree to participate in this study.

Please tell us about yourself:

1. What is your gender:

   o Female
   o Male
   o Transgender

2. What is your age in years _____

3. What is your race:

   o White/Caucasian
   o Black or African American
   o American Indian or Alaska native
   o Asian
   o Native Hawaiian or other Pacific Islander
   o More than one race

4. Are you of Hispanic, Latino, or Spanish origin:

   o Yes
   o No

5. What is your highest level of education:

   o Did not complete high school
   o High School/GED
   o Some College
   o Bachelor's Degree
   o Master's Degree
   o Advanced Graduate Work or Ph.D.
   o *Advanced Clinical Degree, e.g. MD, DO, NP, PA*

6. Have you ever had formal geriatric or gerontological education? (Note that "formal education" includes classroom or online education resulting in a certification, degree, or other recognized qualification).

   o Yes (drop down for yes)
   o No

Dropdown: Please select which of the following best describes your formal training in geriatrics or gerontology (you may select more than one):

- o Geriatric Medicine Fellowship or Clerkship
- o Geriatric Nursing Certification
- o Gerontology undergraduate degree
- o Post-Graduate Gerontology Certificate
- o Gerontology Master's Degree
- o Gerontology PhD
- o Other qualification (please state): _____

7. Do you currently hold a healthcare qualification? (yes/no) (different dropdowns for yes and no)

(Drop down for yes)
What is your current healthcare profession (check the one box that best describes your ~~profession~~ *current role*)?

o Physician (drop down if checked)
Dropdown:
- o Resident (yes/no)

o Physician Assistant
o Nurse (drop down if checked)
Dropdown:
- o Nurse Practitioner (NP)
- o Registered Nurse (RN)
- o Licensed Practical Nurse (LPN)

o Certified Nurse Aide (CNA)
o Physical Therapist
o Occupational Therapist
o Speech and Language Therapist
o Other type of therapist (drop down if checked)
Dropdown:
(please state job title) _____
o Case Manager (yes/no)
Dropdown:
- o Nurse
- o Social Worker
- o Other: Please state _____

o Pharmacist
o Licensed Nursing Home Administrator
o Licensed Assisted Living Facility Administrator
o Social Worker
o Other (drop down if checked)
Dropdown:
(please state job role/job title) _____

(Dropdown for no)
~~Which of the following best describes your profession?~~
~~o Administration (including HR, finance, and IT)~~

~~o Dining Services/Food Services~~
~~o Environmental Services (including Housekeeping and Maintenance Services)~~
~~o Other – Please state _____~~

Which of the following best describes your profession/role in the health system?

o *Administration*
o Dining Services/Food Services
o Environmental Services (including Housekeeping and Maintenance Services)
o Finance
o HR
o IT
o Research
o Other – Please state _____

8. Are you in a leadership position? (yes/no) (drop down for yes)

Dropdown: Please select which of the following best describes your leadership role. If you hold more than one of these roles, please choose the highest role, thinking of the health system's hierarchy:

o Leader of a division
o Leader of a facility
o Leader of a department within a division or facility
o Leader of a unit within a facility
o Team leader within a department or facility
o Process leader
o Other- Please state: _____

9. How long have you worked in your current profession: _____years _____ months

10. How long have you worked for the Riverside Health System: _____ years _____ months

11. What work setting do you primarily work in? (If you work in more than one setting, please check the box for the setting in which you work the majority of the time):

o I work in a hospital (drop down if checked)

Dropdown:
o Hospital emergency department
o Hospital in-patient (drop down if checked)
Dropdown:
o Hospital ICU
o Hospital ACE Unit
o Surgical Services
o Other Hospital Unit – Please state _____

o I work in an outpatient setting (dropdown if checked)

Dropdown:
o I work in Urgent Care
o I work in Primary Care
o I work in another type of outpatient setting

o I work in a continuing care retirement community (CCRC) (dropdown if checked)

Dropdown: Please select which of the following best describes your work setting in the CCRC:

o Skilled Nursing Care/Convalescent Care Unit
o Memory Care Unit
o Assisted Living Unit
o Independent Living
o I work across ALL levels of care in the CCRC

o I work in a skilled nursing care/convalescent care facility (not part of a CCRC)

o I work in home care

o I work in hospice care

o *I work in an administrative or research setting*

12. Thinking about your typical schedule~~,~~

o what percentage of your time is spent with *older* patients* (age 65 or older)? (0-100%)
o *I do not work with patients*

**Note: Patients also includes older people you work with who are residents in long-term care settings.*

The following questions are about growing older.
Please indicate the extent to which you agree or disagree with the following statements (1 = strongly agree, 5 = strongly disagree):

	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
13. I enjoy being around old people.	1	2	3	4	5
14. I fear that when I am old all my friends will be gone. (Reverse scored)	1	2	3	4	5
15. I like to go visit my older relatives.	1	2	3	4	5
16. I have never lied about my age to appear younger.	1	2	3	4	5
17. I feel it will be very hard for me to find contentment in old age. (Reverse scored)	1	2	3	4	5
18. The older I become the more I worry about my health. (Reverse scored)	1	2	3	4	5
19. I will have plenty to occupy my time when I am old.	1	2	3	4	5
20. I get nervous when I think about someone else making decisions for me when I am old. (Reverse scored)	1	2	3	4	5
21. It doesn't bother me at all to imagine myself as being old.	1	2	3	4	5
22. I enjoy talking with old people.	1	2	3	4	5
23. I expect to feel good about life when I am old.	1	2	3	4	5
24. I have never dreaded the day I would look in the mirror and see gray hairs.	1	2	3	4	5
25. I feel very comfortable when I am around an old	1	2	3	4	5

person.					
	Strongly Agree	**Somewhat Agree**	**Neutral**	**Somewhat Disagree**	**Strongly Disagree**
26. I worry that people will ignore me when I'm old. (Reverse scored)	1	2	3	4	5
27. I have never dreaded looking old.	1	2	3	4	5
28. I believe that I will still be able to do most things for myself when I am old.	1	2	3	4	5
29. I am afraid that there will be no meaning in life when I am old. (Reverse scored)	1	2	3	4	5
30. I expect to feel good about myself when I am old.	1	2	3	4	5
31. I enjoy doing things for old people.	1	2	3	4	5
32. When I look in the mirror, it bothers me to see how my looks have changed with age. (Reverse scored)	1	2	3	4	5

The following questions are about working with older patients.

Please indicate the degree to which you agree or disagree with each statement. The best response is the one that truly reflects your personal opinion.

	Strongly Agree	**Somewhat Agree**	**Neutral**	**Somewhat Disagree**	**Strongly Disagree**
33. Most old people are pleasant to be with.	1	2	3	4	5
34. The federal government should reallocate money from Medicare to research on AIDS or pediatric diseases. (Reverse scored)	1	2	3	4	5
35. I would rather see ~~my~~ younger patients than older ones. (Reverse scored)	1	2	3	4	5

36. It is society's responsibility to provide care for old people.	1	2	3	4	5
37. Medical care for old people uses up too much human and material resources. (Reverse scored)	1	2	3	4	5
38. As people grow older, they become less organized and more confused. (Reverse scored)	1	2	3	4	5
39. Older patients tend to be more appreciative of the ~~medical~~ care I provide than are younger patients.	1	2	3	4	5
40. ~~Taking a medical history~~ **Getting information from** older patients is frequently an ordeal. (Reverse scored)	1	2	3	4	5
41. I tend to pay more attention and have more sympathy towards ~~my~~ old patients than my younger patients.	1	2	3	4	5
42. Old people in general do not contribute much to society. (Reverse scored)	1	2	3	4	5
43. Treatment of chronically ill old patients is hopeless. (Reverse scored)	1	2	3	4	5
44. Old persons don't contribute their fair share towards paying for their health care. (Reverse scored)	1	2	3	4	5
45. In general, old people act too slow for modern society. (Reverse scored)	1	2	3	4	5
46. It is interesting listening to old people's accounts of their past experiences.	1	2	3	4	5

Thank you for completing this survey!

Vita

Jennifer Lindsay Knowlton Inker was born in Washington, D.C. in 1962. She earned a Bachelor of Arts degree in Art History in 1984 from George Washington University, a Post-Graduate Diploma in Housing from The University of Wales in 1991, a Master's of Science in Strategic Management and Housing from The University of Wales in 1996, a Master's in Business Administration from George Washington University in 2009, and a Master of Science in Gerontology from Virginia Commonwealth University in 2013. Jennifer is a faculty member in the Virginia Commonwealth University School of Allied Health Professions Department of Gerontology.