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An Investigation of the Most Influential Factors Predicting Nursing Students' Knowledge and Attitude Toward Older Persons

Elaine B. Little

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AN INVESTIGATION OF THE MOST INFLUENTIAL FACTORS
PREDICTING NURSING STUDENTS' KNOWLEDGE AND
ATTITUDE TOWARD OLDER PERSONS

A Dissertation

Submitted to the School of Graduate Studies and Research

in Partial Fulfillment of the

Requirements for the Degree

Doctor of Philosophy

Elaine B. Little

Indiana University of Pennsylvania

August 2017

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Title: An Investigation of the Most Influential Factors Predicting Nursing Students' Knowledge and Attitude Toward Older Persons

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The aging population with complex health needs is growing. Nursing programs are challenged to educate student nurses competent and willing to meet this specific population's needs. Research on ageism supports the presence of aging bias. Possible negative attitudes towards older persons by nursing students is a concern for nurse educators.

Nursing education literature describes how nursing students' attitudes on aging may affect career choices and the quality of health care provided to older adults. The older adult population requires specialized nursing knowledge, skills, and attitudes to achieve positive outcomes and prevent serious geriatric syndromes. Further research in the area of student nurses' knowledge and attitudes of older persons is crucial to prevent a shortage of nurses prepared to care for the increasing number of older adults.

The researcher examined the relationship between knowledge of aging and attitude on aging in final semester nursing students following multiple, national gerontology initiatives. The impact of demographic and educational factors on knowledge and attitude was also investigated. Understanding these relationships may facilitate the creation of nursing programs better designed to attract and prepare nursing students for gerontological nursing,

This study utilized a quantitative, correlational, cross-sectional design and was guided by the Theory of Planned Behavior using the following tools: Kogan's Attitude Toward Old People, the Palmore's Facts on Aging, and a researcher created demographic and educational tool. Findings from the national sample of 168 final semester nursing students showed a positive correlation between knowledge of aging and attitude toward older adults, more positive attitudes, improved knowledge, and a desire to work with older adults. Other statistically significant relationships were found between race, educational degree and attitude toward older adults which may impact nursing practice, nursing education, and future gerontological research. The findings of the current study have the potential to assist nurse educators in the context of curriculum design and delivery, to impact how nurses in health care practice can be influenced to behave toward older patients, and to guide subsequent research in areas of attitude and knowledge of older adults in nursing and other healthcare professionals.

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CHAPTER ONE

INTRODUCTION

Due to the projected growth of the aging population with complex health issues (Administration on Aging, 2013), nursing programs will be challenged to educate student nurses competent to meet this specific population's needs (Institute of Medicine [IOM], 2011). The identification of possible negative attitudes towards older persons by others, which is commonly referred to as ageism, should be a concern for nurse educators. Rather than fostering an attitude of acceptance of the aging process in younger generations, including nursing students, research on ageism seems to reinforce aging bias (Huang, 2013; Hudson, 2009). The ability to fight physical aging with a variety of products marketed by the media and advertisers are additional examples of how aging should be avoided at all costs. Therefore, student nurses' attitudes about aging may affect career choices and the quality of health care that they provide to older adults after graduation (Baumbusch, Dahlke & Phinney, 2012; Baldacchino & Galea, 2012a; Baldacchino & Galea, 2012b; Flood & Clark, 2009; Holroyd, Dahlke, Fehr, Jung, & Hunter, 2009; Huang, 2013; Inouye, Studenski, Tinetti & Kuchel, 2007; Lun, 2011). The older adult population requires specialized nursing knowledge, skills, and attitudes, to achieve positive outcomes and prevent a variety of geriatric syndromes that have serious consequences (IOM, 2010; National League for Nursing [NLN], 2010; Tagliareni, Cline, Mengel, McLaughlin, & King, 2012). Geriatric syndromes such as, falls, skin problems, incontinence, delirium and sleep issues may affect multiple organ systems in the older adult and create clinically challenging situations for graduating nursing students (Bednash, Mezey, & Tagliareni, 2011; Tagliareni et al., 2012).

Therefore, further research in the area of student nurses' knowledge and attitudes of older persons, as well as the desire to work with older persons is critical to prevent a shortage of nurses prepared to care for older adults with multifaceted, geriatric syndromes (McMahon & Fleury, 2012; Tagliareni et al., 2012).

A background of the issues related to the care of older persons with multiple health needs will be presented first. Next, the problem of nursing knowledge and attitudes of graduating nurses will be reviewed to search for themes, trends, and gaps to formulate the study's research questions. Additionally, the research questions, the research design, the rationale, and operational definitions pertinent to the study will be offered. Then, key terms will be defined to assist the reader in understanding the research study. This descriptive, correlational survey design study will be guided by the theoretical approach of the Theory of Planned Behavior (TPB) which is a standardized approach to the study of attitudes and behaviors (Ajzen, 1991; Ajzen & Fishbein, 2005). Lastly, assumptions and delimitations of the study, followed by a discussion on how this study data may be useful in further developing gerontological curriculum, teaching strategies, and recruitment programs for future nursing students and nurses which will provide positive outcomes in the area of older person care will be provided.

Background

During the next 15 years, the United States will continue to experience a record growth in the older adult population requiring specialized nursing care as the *baby boomers*, individuals born between 1945 and 1964, continue to turn 65 years of age (Administration on Aging, 2013; Federal Interagency Forum on Aging Related Statistics, 2012; World Health Organization, 2016). The number of Americans between

the ages of 45-64, who will turn 65 during the next decade and a half, have already increased by 24% between 2002 and 2012 (Administration on Aging, 2013). Persons 65 years or older numbered 43.1 million in 2012 and represented 13.7% of the U. S. population and are predicted to be approximately 72.1 million or 20% of the population by 2030 (Administration on Aging, 2013; United States Census Bureau, 2012). Additionally, older adults over the age of 85, also known as the *oldest old*, are the largest growing group of older adults (United States Census Bureau, 2012). This group is projected to increase 94% from 0.6 million in 2002 to 9.6 million in 2030 and will require the most healthcare (Adams et. al., 2012; Medicare Payment Advisory Commission, 2011; Transgenerational Design Matters, 2012). By the year 2050, The Medicare Payment Advisory Commission (2011), The Pew Research Center (2014), and the Administration on Aging (2013) predict that the number of adults 65 and older will increase by 138% and have an additional 19.2 years of life expectancy due to better nutrition, safety, and medical care.

Four out of five older persons have already been diagnosed with at least one chronic health condition, while almost half have two chronic health issues such as arthritis, cancer, diabetes, heart disease, high cholesterol, or high blood pressure, and 23-55% of current Medicare beneficiaries have five or more chronic conditions (Administration on Aging, 2013; American Geriatrics Society, 2012a; Lochner, Posner, & Parekh, 2013). Furthermore, Lochner et al. (2013) research data confirms that older adults with stroke and heart failure were highly co-morbid with approximately 55% of Medicare beneficiaries having 5 or more additional chronic conditions in the most recent Medicare and Medicaid Review. Older adult research additionally supports that these

chronic health conditions may cause a decline in function and affect older adults' quality of life and healthcare needs (American Geriatrics Society, 2012b; Miller, Coke, Moss, & McCann, 2009; Rodgers & Gilmour, 2011; Tagliareni et al., 2012). The increased need for older adult care will involve a whole range of health care settings, from community health centers to hospitals and nursing homes (Kydd, Wild, & Nelson, 2013; Lin, Bryant, & Boldero, 2011; Ogden, Richards, & Shenson, 2012; Miller et al., 2009). This complex, dynamic population of older adults will need willing, proficient nurses who are gerontologically prepared and competent, to prevent costly complications.

In addition, baby boomers will have a smaller number of potential personal caregivers due to a combination of having fewer children and experiencing increased divorce rates which will result in an increased need of professional health care services (MetLife Mature Market Institute, 2011; World Health Organization, 2016). The increase of older persons with multiple health issues will place unprecedented demands on aging services and the nation's health care system, especially nursing (National Institute on Aging, National Institutes of Health, 2007; Plonczynski, Ehrlich-Jones, Robertson, Rossetti, Munroe, Koren & Hertz, 2007). Older adults may require more long term care, assisted living, and community services because of the potential of reduced caregivers and increased geriatric syndromes (Baumbusch et al., 2012; Tagliareni et al., 2012). Professionals trained in geriatric care are essential to provide care and support for older persons. More geriatric trained nurses may also allow some older adults to return home and remain more independent (Heise, Johnsen, Himes & Wing, 2012; Inouye et al., 2007). This increased demand for healthcare may also affect the nature of the skills and services required and the settings in which this complex care

is provided. Older adults represent the most complex patient needs for nurses due to co-existing acute and chronic conditions. Older patients' physical requirements and goals, as well as physiological and mental health needs may result in changes in their environment and their level of functional ability; requiring different caregiving transitions (Tagliareni et al., 2012). Yet, as the population of older adults increases, the number of health care workers trained in geriatrics decreases (Kydd et al., 2013; Lun, 2011; Swanlund & Kujath, 2012). Moreover, the Bureau of Labor and Statistics (2014) reports large numbers of health care workers will be retiring and/or reducing their work hours at the same time that the demand for older person health care is on the rise. This combination of projected increase in the aging population and the simultaneous decline in the specialized gerontological nurses needed may cause a challenge for healthcare workers and patients.

Pre-licensure nursing curricula are not providing nursing students with enough of the required competencies in areas such as geriatrics, to meet the changing healthcare needs of the U. S. older adult population (IOM, 2008; Heise et al., 2012). According to the American Geriatric Society (2013) and the Institute of Medicine (2010) only 1% of registered nurses (RNs) and 3% of advanced practice RNs in the United States hold specialization or certification in gerontology. The American Nurses Credentialing Center (2011) reported a limited number of newly certified nurses in the gerontology specialty in 2011 with only 3% Gerontological Nurse Practitioners (GNPs) and 5% Clinical Nurse Specialists (CNSs). More recently, due to the dwindling number of applicants, there is no longer a certification in Gerontology for CNSs. Although there is a proven high demand for nurses specializing in the care of older adults, there appears to

be continued lack of interest by nursing students, at all levels. Why are there relatively few nursing students choosing the gerontology field? Are nursing education leaders somehow failing older adults by not encouraging enough interest in gerontological specialization and certification?

Lack of interest in older adult health care may result from a lack of awareness of gerontological opportunities. Gross and Eshbaugh (2011) suggest that student nurses have numerous misconceptions about geriatric employment opportunities, the nature of the work, and the aging population in general. Several studies report negative or neutral attitudes toward older persons in the younger nursing generation which may be the result of staff nurses' and nurse educators' personal negative attitudes toward aging (Baumbusch et al., 2012; Heise et al., 2012; Holroyd et al., 2009; Koren, Hertz, Munroe, Rosetti, Robertson, Plonczynski, & Ehrlich-Jones, 2008; Kydd et al., 2013). Additionally, Henderson, Xiao, Kelton, Paterson & Siegloff (2008) found that some nurses are socialized during their nursing education and/or early years of health care practice to view working with geriatric patients as lower status work requiring less skills and providing no excitement. Yet, literature consistently shows that older adults require more complex nursing skills and have better overall outcomes when cared for by registered nurses (Baumbusch et al., 2012; American Geriatrics Society, 2012a; Heath, 2010; Holroyd et al., 2009; Rodgers & Gilmour, 2011).

Due to the increasing population of aging adults with complicated healthcare problems and geriatric syndromes, three growing worldwide nursing education needs have emerged. First, nursing programs need to educate student nurses to be knowledgeable in gerontological care. Older persons represent some of nurses' most

complex patients. Yet, this is not always evident in how nurse educators teach gerontological care or clinical experiences to nursing students. Cline et al. (2012) reviewed five popular medical/surgical nursing textbooks and four gerontology-specific nursing textbooks that were published by well-established health science publishers and found “inadequate and poor quality coverage” of this topic in 22 of the 29 topic areas reviewed. It is troubling that in commonly used medical/surgical textbooks, the older adult content is still limited, routinely placed at the end of the chapters, and often superficial. Tagliareni et al. (2012) reports that clinical experiences are often not appropriately being used to teach nursing students how to recognize or respond to the ample, interconnected health factors that affect care and quality of life in older adults. Second, student nurses cannot have negative attitudes or behaviors toward older persons (ageism) and effectively provide them with the specialized, quality care required. Nurse educators’ personal negative attitudes toward aging and older adults, as well as students’ feelings of nursing homes and geriatric care being beneath them, may affect the quality of care provided to older adults (Heise et al., 2012; Schrader, 2009). Third, student nurses must have a desire to work with older persons in diverse health care settings such as, surgical, medical, intensive care, and emergency units, as well as long term care facilities after graduation. Some research has shown that certain, substantial types of exposures to older adults in nursing clinical experience may improve student attitudes toward the older adult and enhance future interest in age related career choices (Chase, 2011; Krout & McKernan, 2007; Olson, 2011).

Additionally, some professional nursing organizations are making gerontological education a primary concern, as demonstrated by the National League for Nursing’s

(NLN) vision statement, *Caring for Older Adults* (2012) and the AACN's Recommended Baccalaureate Competencies and Curricular Guidelines for the Nursing Care of Older Adults (2010). One of the challenges facing prelicensure nursing programs is the struggle to place the focus of curricula and education on the distinctive and complex needs of the gerontological population. As this needed gerontological curricula develops, textbooks will be expected to provide the foundation for many of these learning experiences. Yet, medical/surgical nursing textbooks which are widely used in pre-licensure nursing programs as a primary reference source continue to lack appropriate content about older adults (Cline et al., 2012).

All three of the previously mentioned gerontology needs are supported by existing research. Some research suggests that nursing programs are working toward meeting the first need by including gerontology content throughout the curriculum (Blais, Mikolaj, Jedlicka, Strayer, & Stanek, 2006; Kohlenberg, Kennedy-Malone, Crane, & Letvak, 2007; McCleary, McGilton, Boscart & Oudshoorn, 2009), while other programs are including a separate gerontology course (Koren et al., 2008; Wallace, Lange, & Grossman, 2005; Williams, Anderson & Day, 2007), and still others are combining both strategies (Baumbusch et al., 2012; Miller et al., 2009). Additionally, since 2003 national and international as well as, professional and philanthropic organizations have acknowledged the growing need to teach pre-licensure nursing students gerontology skills with the onset of multiple gerontological initiatives and programs (American Association of Colleges of Nursing (AACN), 2008; American Association of Colleges of Nursing & The John A. Hartford Foundation Institute for

Geriatric Nursing, 2008; IOM, 2010; NLN, 2008; NLN, 2010; Pew Research Center, 2005).

Some gerontological initiatives that were created to increase skills and knowledge include: Quality and Safety Education for Nurses (QSEN) adapted from the IOM six competencies for nursing, established in 2003, which includes patient-centered care, teamwork and collaboration, evidenced based practice, quality improvement, safety, and informatics; Geriatric Nursing Education Consortium (GNEC), a national initiative of the American Association of Colleges of Nursing and the Hartford Institute for Geriatric Nursing used a train the trainer approach to enhance geriatric content in senior level undergraduate nursing courses, between 2007 and 2009, using nine evidence based modules to approach care for older adults with complex care needs; and Advancing Care Excellence for Seniors (ACES) unfolding gerontological case studies created by NLN, John A Hartford Foundation, Laerdal Medical and Independence Foundation in 2010. Despite these initiatives to bring care of older adults to nursing education, major gaps in prelicensure nursing programs and research still remain. Nursing programs continue to lack gerontological content, faculty expertise of older adults, and high-quality, substantial older adult clinical experiences (Gilje, Lacey, & Moore, 2007; Plonczynski et al., 2007; Tagliareni et al., 2012).

In all cases, literature strongly supports that nursing faculty who teach about the population over 65 years of age must be adequately prepared in gerontological nursing (AACN & The John A. Hartford Foundation Institute for Geriatric Nursing, 2008; Alliance for Aging Research, 2006; Henderson et al., 2008; IOM, 2010; NLN, 2010; Pew Research Center, 2005). Nurse educators should have some previous practice

experience and/or keep up-to-date about advances in the field of gerontological nursing to properly prepare nursing students in geriatric knowledge (Griscti, Jacono, & Jacono, 2005; Koh, 2012). New knowledge about older person care and geriatric syndromes emerges daily, yet new research to support the relationship between geriatric knowledge and attitude is lacking in the literature (Benner, Sutphen, Leonard, & Day, 2010; Tagliareni et al., 2012).

The second need requires further study because existing research on nursing student attitudes toward the older adult is conflicting (Abbey et al., 2006; Baumbusch et al., 2012; Celik, Kapucu, Tuna, & Akkus, 2010; Holroyd et al., 2009; McGarry, Aubeeluck, Simpson & Williams, 2009). Some studies have found that nursing students have positive attitudes toward older persons (Doherty, Mitchell & O'Neill, 2011; Ferrario, Freeman, Nellett, & Scheel, 2008; Pan, Edwards, & Chang, 2009; Shellman, 2006), while others find nursing student attitudes of older persons to be more negative (Celik et al., 2010; Deltsidou, Gesouli-Voltyraki, Mastrogiannis, Mantzorou, & Noula, 2010; McGarry et al., 2009). Henderson, et al. (2008) found that nursing students who had more positive attitudes towards older adults still did not plan to take care of older adults after graduation. In addition, the researchers found that more negative attitudes seemed to form during nursing early clinical experiences when fundamental nursing skills were being performed. Lastly, Henderson et al. (2008) found there students reported an overall lack of ability to relate to or converse with older adults in general, as well as a feeling that this type of work was not exciting, more repetitive, boring, and generally beneath them. Additional studies find that nursing students have more ambivalent or neutral feelings toward older persons (Abbey et al., 2006; Alabaster,

2006; Holroyd et al., 2009; Rodgers & Gilmour, 2011; Wesley, 2005). It is urgent that further research be done to explore which educational and demographic factors best predict nursing students' attitudes toward older persons. This research could assist with the promotion of gerontological knowledge, skills, and geriatric nursing interests upon graduation from nursing programs.

The third need, the desire to work with the older person population, requires additional research. There is a gap in this research area and the existing research suggests that nursing students rarely select geriatrics as their career choice (Berman et al., 2005; Fitzgerald, Wray, Halter, Williams, and Supiano, 2003; Henderson et al., 2008; Stevens, 2011). According to Gross and Eshbaugh (2011) many undergraduate students in the United States do not have knowledge about gerontology, nor are they aware of all of the opportunities available in the field today. The researchers strongly recommend making students aware of the varied older adult opportunities (Gross & Eshbaugh, 2011). Nursing education literature often reports students being unable to relate to older persons, having no desire to deal with them due to their increased dependence, feeling an overall lack of gerontological knowledge, as well as finding older adults depressed, depressing, and in need of care that is perceived as boring and unchallenging (Ferrario et al., 2008; Henderson et al., 2008; McGarry et al., 2009; Ryan & McCauley, 2004/2005). Although the care of older adults requires specialized knowledge and includes the most complex clients, students commonly ranked pediatrics, obstetrics, critical care and emergency nursing higher than geriatrics, citing preferences for healthier populations and faster paced environments (Stevens, 2011; Swanlund & Kujath, 2012). In a replicated longitudinal study by Stevens (2011), it was reported that

the ranking of desire to work with older adults by nursing students decreased each year students are in nursing school; to become the least desired career choice of graduating nursing students.

Due to the identified gaps and conflicting results of the current research on older person care in the literature, further research is needed to explore what factors most affect student knowledge and attitude to increase desire to work with older adults after graduation from nursing schools. This research study will explore the relationship between the demographic variables of age, gender, marital status, ethnicity, type of nursing program, and where the student intends to work after graduation to the educational variables of type of clinical setting, type of gerontological curricular design (stand-alone course, integrated, or both), and knowledge of aging to find which factors are most influential in predicting nursing students attitudes toward older persons and their care. This information may assist nurse educators in making gerontological curricular revisions and developing appropriate pedagogy to provide nursing students with the best knowledge, skills, and attitudes to provide for this growing population's diverse healthcare needs.

Research Problem

The problem is that much of the existing older person literature regarding nursing students, as well as their attitudes and knowledge, is inconsistent. Although there is a growing need for nurses with gerontological skills, research suggests that graduating nurses still lack gerontological knowledge (Flood & Clark, 2009; Miller et al., 2009; Neville, 2015; Robinson & Cubit, 2007; Souder, Beverly, Kitch & Lubin, 2012). Existing older person research remains incongruous on nursing students'

attitudes toward older adults, suggesting that further examination of this phenomenon is needed (Cottle & Glover, 2007; Funderburk, Damron, Rodriguez, & Solomon, 2006; Swanlund & Kujath, 2012). Most studies report use of small samples, are limited to one nursing program, and/or specifically examine nursing student attitudes after a specific curricular intervention (Burbank, Dowling-Castronovo, Crowther, & Capenuti, 2006; Williams et al., 2007; Rodgers & Gilmour, 2011). Academic gerontology is growing as a direct result of the many geriatric initiatives, but the literature is conflicting on whether types of gerontological curricular design may affect only nursing students' knowledge of aging, or if it will influence gerontological career choices (Coleman, 2015; Gilje, et al., 2007; Stevens, 2011). Furthermore, research suggests that negative attitudes about aging may affect student nurses' career choices, with many students choosing other areas of nursing such as critical care, obstetrics, surgical, or pediatric nursing (Ferrario et al., 2008; Flood & Clark, 2009; Stevens, 2011; Wesley, 2005). Meanwhile, statistics by The John A. Hartford Foundation Institute for Geriatric Nursing (2008) support that most students will be required to care for this older person population in a multitude of healthcare settings including home health, outpatient centers, emergency rooms (ER), operating rooms (OR), medical-surgical units, critical care units (CCU), and intensive care units (ICU).

Professionals trained in older person care are essential to provide care and support for aging baby boomers (Heise et al., 2012). A report by the IOM (2008) entitled, *Retooling for an Aging America: Building the Health Care Workforce* indicated that pre-licensure nursing curricula are not providing enough nurses with the required competencies in areas such as gerontology to meet the changing health needs of the

aging U. S. population. Furthermore, research completed by Lun (2011), as well as Swanlund and Kujath (2012) identifies that as the population of older adults increased, the number of health care workers trained in geriatrics continues to decrease. Simultaneously, large numbers of health care workers will be retiring and/or reducing their working hours at the same time that the demand for geriatric health care is increasing (Bureau of Labor and Statistics, 2014). The greater demand for healthcare may affect the nature of the skills and services required, as well as the settings in which this care is provided.

Lastly, existing literature reports that nursing students rarely choose gerontology as a career choice, which indicates the need of further exploration of this phenomenon to prevent a nursing shortage in the area of older adult care (Berntsen & Bjork, 2010; Boswell, 2012; Ironside, Tagliareni, McLaughlin, King, and Mengel, 2010; Stevens, 2011; Williams, Nowak & Scobee, 2006). The Hartford Institute for Geriatric Nursing (2012) reports that older adults make up approximately 50% of all hospital stays; 80% of homecare visits; and represent 90% of long-term care residents. The Hartford Institute's report further states that older persons make up 60% of medical-surgical units, 46% of coronary care units (CCU), 50% intensive care units (ICU), and 26% of emergency room (ER) admissions. These statistics support that almost all nursing students will eventually care for older adults. Nursing students also appear to be unaware of the varied opportunities of working with older persons. Geriatric nurses work in hospitals in all departments, nursing homes, rehabilitation facilities, senior centers, as well as in retirement communities and patients' homes. Nurses often work as part of an interdisciplinary care team that includes physicians, social workers, nursing aides,

physical therapists, occupational therapists and other caring professionals; frequently taking on administrative, training and leadership roles (Gross & Eshbaugh, 2011; Swanlund & Kujath, 2012).

With the expected growth in the older adult population with multiple healthcare needs, it is crucial that nursing students be knowledgeable about, as well as willing to work with older persons upon graduation from nursing programs, to avoid a nursing crisis in gerontology. Despite many initiatives to bring care of complex, older adults to present nursing education, major gaps and conflicts in the literature remain. This study seeks to clarify some of the existing research, provide nurse educators with data to build gerontological curriculum, and potentially lead to increasing numbers of graduate nurses prepared to care for the older person population, in various health care settings.

Purpose of the Study

The primary purpose of this study is to determine which demographic and educational factors may predict the independent variable: attitude toward aging. The dependent variables of age, gender, race, marital status, type of nursing program, desire to work with older adults, clinical sites, gerontology content, and knowledge of aging were studied to look for additional relationships. This information may assist nurse educators in developing future gerontological pedagogy, better simulated and actual geriatric clinical experiences, and curriculum development. The secondary purpose of this study is to identify which demographic and educational factors are most influential in predicting nursing students' attitude toward older persons to possibly assist in increasing the number of graduating nursing students wanting to work with older adults as a career choice. Understanding these relationships may also facilitate the creation of

nursing programs better designed to attract nursing students to the field of gerontology, while preparing them to meet the challenges of caring for complex older persons in various settings. This descriptive correlational study used a non-experimental survey design and convenience sampling to address the following three research questions.

Research Questions

1. What demographic factors and educational factors best predict knowledge of aging?
2. What demographic factors and educational factors best predict nursing students' attitudes toward older persons?
3. What is the relationship between knowledge of aging and nursing students' attitudes toward older persons, after controlling for all the other factors?

Definition of Key Terms

The following definitions of key terms, as well as operational definitions are provided to assist the reader with understanding the research study.

Ageism: an attitude that discriminates, separates, stigmatizes, or otherwise disadvantages older persons based on chronologic age (Mosby's Dictionary of Medicine, Nursing, & Health Professions, 2013).

Attitudes toward older persons: A state of mind or a feeling regarding the older adult person as measured by the statements contained in the Kogan's Attitudes Toward Old People Scale (1961).

Baby Boomer Generation: Individuals born between 1945 and 1964 (Administration on Aging, 2013).

Career choice: The area of nursing which students have a desire to enter upon graduation from their nursing program.

Demographic factors: Demographic factors in this study include nursing students' age, gender, ethnicity, marital status, type of nursing program, previous older person care experience, choice of workplace, and desire to work with older adults after graduation.

Educational factors: Educational factors in this study include type of clinical setting, type of gerontological content, and knowledge of aging.

Geriatrics: A branch of study that deals with the problems and diseases of old age and aging people (Mosby's Dictionary of Medicine, Nursing, & Health Professions, 2013).

Geriatric syndromes: Term used to capture multifactor conditions that occur in older persons that have specific signs and symptoms that contribute to mortality and morbidity which do not fit into discrete disease categories. Classic geriatric syndromes include delirium, falls, incontinence, eating or feeding problems, and skin issues (Inouye et al., 2007; NLN, 2010).

Gerontology: The study of all aspects of the aging process, including the clinical, psychological, economical, and sociological issues encountered by older persons and their consequences for both the individual and society (Mosby's Dictionary of Medicine, Nursing, & Health Professions, 2013).

Intent to work with older persons: The plan of nursing students to work in or to avoid working in positions caring primarily for older persons after graduation from their nursing programs using the created demographic and educational items.

Knowledge of aging: The level of accurate information that a student has about physical and behavioral aspects of aging as measured by the statements contained in the Facts on Aging Quiz 1 (FAQ1) (Harris, Changas, & Palmore, 1996).

Nursing student: a person who meets the study criteria of 1) being enrolled in any type of accredited nursing program in the United States; 2) being in the last semester of a nursing program (pre-licensure); 3) speaking and reading the English language.

Old: The sub-group of older persons ranging in age from 75-84 years of age (Transgenerational Design Matters, 2012).

Older person: an adult person having lived for a period of 65 years or more (Taylor, Lillis, LeMone, & Lynn 2015).

Oldest-old: The sub-group of older persons ranging in age from 85 years or older (Transgenerational Design Matters, 2012).

Type of clinical site: The environment where students perform the act of nursing with older clients and receive some type of evaluation or grade in the nursing (e.g. medical, surgical, long-term care, emergency room, intensive care unit).

Type of gerontological curricular design: The way in which nursing students perceive receiving gerontological content in their specific nursing program (e.g. content may seem integrated throughout the curriculum, be a stand-alone course, or both, as well as the amount of gerontological content, in a percentage) using the created demographic and educational items.

Type of nursing program: The nursing program type refers to baccalaureate (BSN), associate (ADN) and diploma in nursing programs.

Young-old: The sub-group of older persons ranging in age from 65-74 years of age (Transgenerational Design Matters, 2012).

Significance

With the anticipated growth in the older adult population, it is critical that nursing students be knowledgeable and willing to work with older persons with complex health care problems in a variety of settings upon graduation from nursing programs to avoid a gerontological nursing shortage. The number of nurses required to provide competent care to the increasingly older person's population is steadily rising with approximately 50% of the patients in hospitals and care centers being over 65 years of age a few years ago (Ironside et al., 2010). People age 65 and older made up 34.9% of hospital stays with approximately 75% of those stays being medical, not surgical in nature (Agency for Healthcare Research and Quality, 2014). Commonly in the U. S., many of these hospitalized older adults transition from the hospital to either skilled nursing facilities or go home with needs requiring frequent home health care visits (United States Department of Health and Human Services {USDHHS}, 2012). Therefore, older adult care in a variety of settings may become the predominant care experience for all nurses regardless of whether or not they desire to work with this type of patient. A huge problem may occur if graduating nurses' attitudes toward working with this older adult population are not positive, which may have a negative effect on the quality of care provided to complex older adults. Minichiello and Coulson (2005) suggest that dehumanization of older persons makes it easier to treat them disrespectfully, as well as devaluing their desires or needs. Plonczynski et al. (2007), as well as Stevens (2011) both report that a predicament is up-and-coming as the nursing

workforce interested in caring for older people diminishes concurrently as the aging populations are increasing throughout the world. Healthy People 2020 established national objectives including “improving the health, function, and quality of life for older adults” (USDHHS, 2012). Are nurse educators preparing a nursing workforce that can meet this national objective? This study seeks to build upon previous research to provide valuable conceptual insight, as well as empirical information that may assist with designing nursing education curriculum and pedagogy that may effectively recruit more knowledgeable student nurses into gerontological nursing, therefore providing nurses competent to care for the growing older adult population.

Methods

Design

This study used a descriptive, correlational survey design. As with most descriptive correlational studies, this study used cross-sectional indicating that the research was conducted to describe relationships among variables at one point in time without seeking to establish causality. The main advantage to this type of research design is its economic efficiency in collecting a large amount of data about a problem economically (Austin, Richter, & Reinking, 2008; Polit & Beck, 2017). This research design allowed identification of the following: 1) the relationships among knowledge of aging, type of gerontology content received in the student’s nursing program and desire to work with older adults after graduation, 2) the extent to which knowledge of aging and type of gerontological curricular design received in the student’s nursing program predicts nursing students’ attitudes toward older persons, and 3) which demographic and educational variables are most influential in predicting nursing students’ attitudes toward

older persons? More specifically, the design is suited to extensive analysis of concepts of a broad nature such as attitudes towards older persons and knowledge of aging.

Instruments used for this study are the Kogan Attitude Toward Old People Scale (KATOP), developed by Kogan in 1961 to measure attitudes of students toward the elderly (Appendix A) the Facts on Aging Quiz 1 (FAQ1), originally developed in 1988 by Palmore to examine the knowledge of health professionals on aging and later modified by Harris et al. (1996) to a multiple choice format (Appendix B), and the Demographic and Educational Survey Questions (Appendix C) developed in 2015 specifically for this study. Kogan's KATOP questionnaire was selected because of its ease of administration, applicability to nursing with its caring dimension, and its reliability and validity in various United States and international studies (Alsenany, 2009; Bleijenberg, Jansen, & Schuurmans, 2012; Doherty et al., 2011; Kilic & Adibelli, 2011; Matarese, Lommi, Pedone, Alvaro, & DeMarinis, 2013). Kogan's KATOP uses 17 negative and 17 positive statements about older adults using either a 5, 6 or 7-point Likert scale with response categories ranging from strongly agree to strongly disagree.

The second tool, the FAQ1 was selected due to its ease of administration and its psychometric properties in many published research studies in various disciplines (Allan & Johnson, 2009; Bleijenberg et al., 2012; Seufert & Carrozza, 2002). Harris et al. (1996) modified the original FAQ1 from true-false to a multiple choice format to reduce the chances of guessing correct answers. The 1996 study showed greater accuracy on identifying specific misconceptions about aging with no difference in the mean discrimination index between the two formats, greater reliability than its counterpart, as well as a higher point by serial than the true false version; therefore, increasing the

chances that an obtained score accurately represents respondent knowledge level. This methodology will be used to broaden the state of the science with nursing students' attitude and knowledge of older persons and provide research based evidence to assist in gerontological curricular revision and teaching pedagogies.

Setting

After Internal Review Board (IRB) approval from Indiana University of Pennsylvania, a convenience sample was recruited by the researcher through personal emails to the researcher's professional contacts throughout the United States. Professional contacts received an email with a recruitment flyer attached which provided a brief message explaining the purpose of the study, as well as, all inclusion and exclusion criteria and a link to the Qualtrics survey

An additional convenience sample was obtained by sending a second set of emails to other professional contacts of the researcher, throughout the nation. A recruitment flyer (Appendix D) was sent to additional professional contacts, throughout the nation, via an email which provided information about the study, the website URL with the inclusion and exclusion criteria, as well as the Qualtrics link so that additional pre-licensure nursing students in the last semester of their nursing program may choose to take part in the study. Information on the study, its purpose, inclusion and exclusion criteria, as well as possible risks, were provided for the students in the broadcast ad and at the beginning of the survey. Informed consent was assumed by the completion of the survey.

Assumptions

Researchers may make assumptions or believed truths about their research. The following are the assumptions related to this study.

1. Students in the final semester of their nursing programs will accurately answer questions in the study tools without prejudice.
2. The nursing student's answers will appropriately reflect their individual experiences of older person care.
3. Attitudes toward older persons could be both positive and negative, and vary between study participants.
4. Attitudes by care providers can affect the care provided to older persons.
5. Human beings are rational and make systematic use of information available to them.
6. People consider the implications of their actions before they decide whether or not to engage in certain behaviors.
7. The terms older person, older adult, aged, aged adult, aged person, old people, senior citizen, or elderly can be used interchangeably to describe a person who is perceived by students to be 65 years of age or greater.
8. Data obtained from this research will provide a current description of how demographic factors, attitudes toward older persons, knowledge of aging, or type of gerontological curricular design received in the student's nursing program may affect career choices after graduation.

In addition to the foundation provided by these research questions, methods, and assumptions; this study was guided by the following theoretical framework derived from psychological research.

Conceptual Framework

The Theory of Planned Behavior (TPB) provides a conceptual framework and behavioral model to guide the research study. TPB is found to be well supported by empirical evidence in nursing and other disciplines of study in the United States (Turchik & Gidycz, 2012; Werner, 2012; Yoon, 2010) and in other countries (Aghamolaei, Tavafian, Madani, 2012; Cote, Gagnon, Houme, Abdeljelil, & Gagnon, 2012; McKinlay & Cowan, 2006; Yang, 2012). TBP is based upon two major assumptions: 1) that human beings are rational and make systematic use of information available to them and 2) people consider the implications of their actions before they decide whether or not to engage in certain behaviors (Ajzen, 1991). The TPB further suggests that behavior is governed by intent, which is a combination of one's attitude as to whether performing the behavior will result in a positive or negative outcome, and one's motivation to meet the perceived expectation(s) of others (Ajzen, 1991). Determinants of intention are attitude towards behavior, subjective norms, and external variables. Ajzen and Fishbein (2005) further describe "attitude toward the behavior" as a function of beliefs that lead to certain outcomes; a person's motivation to meet the perceived expectations of others as a "subjective norm"; and personality traits, attitudes toward people or institutions, as well as demographic factors that may influence intentions or behavior indirectly as "external variables". For example, nursing students may be willing to take care of older persons if, after weighing their personal feelings or

attitudes, they believe that working with or taking care of the older person will lead to more positive than negative outcomes in society. Thus, nursing students' knowledge of aging and attitudes towards older persons could directly influence their intention to work with older persons.

Delimitations

This study is delimited by the use of convenience sampling of nursing educator and other professional colleagues for sample recruitment, as this may somewhat limit the generalizability of the data. Student participants from nursing programs belonging to these organizations and colleagues' programs may bear different characteristics.

Summary

In conclusion, this chapter presents the case for increasing the number of nursing students with a positive attitude and increased knowledge of older adults. Because of the increased geriatric population, nearly all nursing students may predominantly work with older adults after graduation. The literature has shown consistently over time that there is a culture among nursing students and registered nurses that does not view the work with older adults as favorable or preferable (Abbey et al., 2006; Henderson et al., 2008; Stevens, 2011). Nurse educators must examine the variables that most affect nursing student attitude and knowledge of older adults due to the nations' increasing aging population. The primary purpose of this national study was to use the Theory of Planned Behavior to analyze and identify the influence of demographic factors and educational factors on knowledge of aging using the Kogan KATOP scale, student attitudes of older persons using the Palmore FAQ1, and desire to work primarily caring for older persons in a nursing career using demographic questions.

Given the increasing population of aging adults with complicated healthcare problems, there is a critical worldwide need for nursing programs to understand any relationships between these variables to find innovative ways to engage nursing students so that they will see the benefits of working with older adults. Understanding these variables will assist in the education of student nurses and may further aid nursing faculty to encourage them to work with older adults in diverse health care settings. The data obtained in this study may further be useful in developing better gerontological curriculum and recruitment programs for future nursing students that will provide positive outcomes in older person care.

CHAPTER TWO

LITERATURE REVIEW

The following is a review of the literature relevant to nursing students' knowledge and attitudes of older adults. The review will specifically identify gaps within the literature supporting the need for this nursing research study. First, the topics investigated will comprise an overview of the aging population including its characteristics and health issues and nursing students' attitudes toward aging. Then, the demographic factors of students' age, gender, race, ethnicity, marital status, type of nursing program, and desire to work with older adults was reviewed. Subsequently, a review of the educational factors including type of gerontological curricular design/content, type of clinical settings provided in nursing programs, and students' knowledge of aging were explored. Next, the Theory of Planned Behavior (Ajzen, 1991) is reviewed. Afterward, aging knowledge and attitude of aging measurement tools are discussed. Lastly, a summary of the literature is provided.

A systematic literature search using CINAHL, Medline, and Health Source: Academic databases for studies published from July 2000 through July 2015 was conducted with limitations of the English language, peer reviewed articles, dissertations, and the key search terms "aging population", 'elder care', 'student nurse perceptions', 'attitudes of aging', 'knowledge of aging', 'ageism', 'older persons and health issues', "older adults", and 'geriatric content'. Duplications were identified and then deleted. Abstracts were then scanned for relevance to this study. Consequently, bibliographies of retrieved articles were also scanned and additional pertinent articles were reviewed. An

additional literature review using similar search parameters was conducted with the added search terms of “theoretical framework’ and ‘Theory of Planned Behavior’.

Overview of the Aging Population

Transgenerational Design Matters (2012), an educational, research and advocacy agency, states that never before in human history has our planet contained so many older people and that this has not always been the case with older Americans numbering only 5.4% or approximately 7 million in the 1930’s. Currently, the United States is starting to experience this record growth in the older adult population as the “baby boomer” generation begins aging. As stated in Chapter 1, baby boomers are individuals born between 1945 and 1964 and the oldest baby boomers started turning 65 in 2010; the youngest will turn 65 in 2029 (United States Census Bureau, 2012). The following demographics of the approximately 77 million adults, in the baby boomers’ generation, provide a very clear picture of things to come in both the nursing and healthcare worlds.

The US Department of Health and Human Services (2012) and the Administration on Aging (2013) report that baby boomers numbered 39. 6 million in 2009 and represented approximately 13% of the U. S. population which is about one in every eight Americans. At present, Americans aged 65 and older outnumber the combined population of New York, London, and Moscow (Transgenerational Design Matters, 2012). By 2030, it is predicted that there will be about 71.5 million older persons or 20% of the population over 65 and that by 2050 one in five Americans will be 65 years of age or older (Medicare Payment Advisory Commission, 2011). The dramatic increase in the number of older persons has expanded the classification of those age 65 and older into three sub-populations commonly referred to as the “young

old” ranging in age from 65- 74, the “old” ranging from 75-84, and the “oldest old” containing adults over the age of 85 (Transgenerational Design Matters, 2012).

In addition, the United States Census Bureau Report (2012) states that in 2050, those aged 85 and over are projected to account for 4.3 percent of the U. S. population, up from the anticipated 2.3 percent in 2030. The report further notes that the “oldest old” are the largest growing group of older adults, projected to increase from 5.7 million in 2010 to over 19 million in 2050. Their growth rate is twice that of adults 65 and over and they are expected to require the most healthcare. Additionally, older women outnumbered older men in the United States at 50.8% and 49.2% respectively and the proportion that is female increases with age. Women accounted for 57 percent of the population age 65 and over and for 67 percent of the population age 85 and over. Seventeen percent of women older than 85 years live below the poverty level as compared with 9.6% of men. Interestingly, Song, Change, Manheim & Dunlop (2006) found that women are significantly less likely to use hospital service and outpatient surgery than men, but are more likely to use home health care, physician, and nurse practitioner services in their analysis of the 9088 participants in the national longitudinal Health and Retirement Studies of 1998 and 2000. Similar findings were reported by the American College of Cardiology (2015). The study reported that older women waited longer or did not go to the hospital, even when suffering cardiac symptoms. Women were even less likely to accept treatment to open clogged arteries than men even after being brought to the hospital emergency room.

Transgenerational Design Matters (2012) reported that 83% of older adults in the United States were non-Hispanic white; 8% were non-Hispanic black; 6% were

Hispanic; and 3% were Asian. By 2030, the changing face of older adults in the United States will be evident: only 72% of this population will be non-Hispanic white; 11% will be Hispanic; 10% will be black; and 5% will be Asian (Administration on Aging, 2013). In addition to the statistics provided by these agencies, the literature suggests that the majority of Medicare aged older adults will be ethnically diverse, have more health issues, and a smaller number of potential caregivers due to increased divorce rates and producing fewer children (Adams et al., 2012; Carey, et al., 2008; Lau & Kirby, 2009; Song et al., 2006; Treas, 2011).

Health Issues of the Aging Population

The vast number of adults growing older with less potential caregivers will place exceptional demands on aging services and the nation's health care system, including the nursing profession. Over 80% of older adults have been diagnosed with at least one chronic health condition, almost 50% have two chronic health conditions including arthritis, cancer, diabetes, heart disease, high cholesterol, or high blood pressure, and approximately 20% of current Medicare beneficiaries have five or more chronic health conditions (Adams et al., 2012; Medicare Payment Advisory Commission, 2011). Similarly, the Centers for Disease Control and Prevention and Merck Company Foundation (2007) and the American Geriatrics Society (2013) affirm that older persons, over the age of 75, average three chronic conditions.

Literature supports that these chronic health conditions cause a decline in function and may affect quality of life (Adams et al., 2012; Aud, Bostick, Marek & McDaniel, 2006; Miller et al., 2009; Rodgers & Gilmour, 2011). This in turn, will cause older adults to seek access to the healthcare system in a variety of settings (Carey et al.,

2008; Lin, Bryant, & Boldero, 2011; Ogden, Richards, & Shenson, 2012). There is further evidence in a National Institute of Aging report compiled by a panel of 14 independent experts from several disciplines, including geriatrics, primary care, health services research and administration, epidemiology, and clinical trials (Allan & Johnson, 2009). The report noted that the intensity and complexity of treating persons with multiple chronic conditions accounts for more than 80% of Medicare expenditures. Since the aging process is individualized with older adults having different needs, individuals with multiple chronic conditions receive multiple interventions, each of which may positively or negatively affect other coexisting conditions (Adams et al., 2012). In the NLN Advancing Care Excellence for Seniors (ACES) project, Tagliareni et al. (2012) report that older adults with chronic illness may require nurses to coordinate care of multiple coexisting conditions. These coexisting conditions which can occur during hospitalizations or transitions of older adults may include polypharmacy issues, geriatric syndromes, and complications requiring situational decision making and individualized problem solving by nurses knowledgeable in gerontological matters.

These pre or coexisting health conditions and geriatric syndromes generally affect multiple organ systems of the older adult (Allan & Johnson, 2009; Inouye et al., 2007; Tagliareni et al., 2012). Nurses need further education to be able to recognize the complex interplaying of chronic and acute conditions to prevent these geriatric syndromes. Physiological and psychological needs may come together in complex and unpredictable ways as a result of change in environment, functional abilities, and levels of independence while older adults are sick or recovering from illness. Nurses need

specialized gerontological education to be able to care for older adults and their caregivers in ways that diagnose and incorporate the complexity of care inherent to the aging process.

To this end, *Caring for the Older Adult*, a NLN Vision Series document published in April of 2011, called upon all nurse educators to better prepare student nurses to advance the health of the multiethnic, multiracial older adult population of the nation. More recently, in the article, *Quality Care for Older Adults: The NLN Advancing Care Excellence for Seniors (ACES) Project*, Tagliareni et al. (2012) suggest that prelicensure nursing programs must foster an understanding of the complexity of care including, “geriatric syndromes (e.g. delirium, falls, incontinence, pressure ulcers, sleep disturbances), oral hydration, fluid overload, infection, poly-pharmacy, depression, dementia, and multiple chronic diseases with acute exacerbations.” (p.145). By 2029, when 78 million baby boomers in the United States will be 65 years of age and older, some specialists expect that we will be in the midst of a healthcare epidemic requiring large numbers of gerontological prepared nurses (Healthcare Intelligence Network, 2006). Therefore, this ever changing yet complicated population requires willing and able nurses to meet their needs and prevent complications and geriatric syndromes.

Need for Increased Gerontological Competence

The Bureau of Labor and Statistics (2014) confirms that older adults will need the most services from healthcare providers. This influx of older adults entering the healthcare setting will consist of clients that require multifaceted nursing care in a variety of healthcare settings. For example, approximately 91% of older persons have at least one chronic disease, nearly 73% have two chronic health conditions, and close to

20% have five or more chronic health issues including arthritis, cancer, diabetes, heart disease, high cholesterol, or high blood pressure with arthritis, heart disease, and hypertension being the most prevalent (National Council on Aging, 2014). The Administration on Aging (2013) provides the following additional statistics on adults over 65 years of age. Older adults utilize the bulk of home services; comprising approximately 69% of home care recipients. Direct care by registered nurses in the community is given to over 45% of those over 65. Approximately 90% of the residents in nursing homes are aged adults. The majority of nursing home residents require assistance with activities of daily living and have significant cognitive impairments (Administration on Aging, 2013). To ensure that older adults live a healthy life of good quality, national and international committees have started many gerontological initiatives and supplied multiple large grants since 2003 (AACN, 2008; American Association of Colleges of Nursing & The John A. Hartford Foundation Institute for Geriatric Nursing, 2008; National League for Nursing, 2008; Pew Research Center, 2005).

With these initiatives and funds, nurse educators are trying to work toward preparing a workforce that is knowledgeable and skilled in geriatric nursing. Yet, despite the growing need for competent older person care and concerted efforts of multiple philanthropic organizations; major gaps in pre-licensure nursing programs remain (Liu, Norman, & While, 2012; Tagliareni et al., 2012). Nursing programs lack geriatric content in curricula, faculty expertise, and sufficient clinical experiences with older adults (Franklin et al., 2011; Liu et al., 2012; Tagliareni et al., 2012). For example, in a four year, cross sectional study, Holroyd et al. (2009) studied 197 BSN

students who reported that lack of appropriate knowledge and inadequate time at the bedside severely limited the provision of the specialized care that older persons require to have good outcomes. The continued lack of gerontological change and integration into undergraduate nursing programs is not surprising since few faculty (5-10%) possess gerontological expertise (Plonczynski et al., 2007). The lack of gerontological expertise as well as missing gerontological content may influence older adult outcomes, as well as student attitudes toward older persons.

Nursing Students' Attitudes Toward Older Adults

Good outcomes, including longevity and quality of life for older persons, may depend upon increased gerontological competence and positive student attitudes.

Nursing attitudes toward older adults has been researched over the years (Baldacchino & Galea, 2012a; Baldacchino & Galea, 2012b; Buttner, 2008; Celik et al., 2010; Liu, Norman & While, 2012). Some studies have found nursing students to have positive attitudes toward older persons (Celik et al., 2010; Pan, Edwards, & Chang, 2009; Shellman, 2006; Williams, Anderson & Day, 2007), while others find nursing student attitudes to be more negative of older persons (Celik et al., 2010; Happell, 2002; McGarry et al., 2009), some find neutral attitudes in nursing students (Bernsten et al., 2010), and one study found both positive and negative attitudes, in different research sites (Lambrinou, Sourtzi, Kalokerinou & Lemonidou, 2009). Historically, attitudes of student nurses have not been consistent. According to Hatch (2005), the way society perceives an older adult is directly related to their productivity in society. Buttner (2008) explored changes in nursing students' attitudes toward aging after a gerontological nursing course (N=121) in a more recent dissertation. The students

showed significant improvement in attitude toward older adults $t(115) = 4.63, p < .01$ after the gerontological course.

Nursing research recurrently shows that nursing students' negative older adult views are often linked to societal perceptions and can frequently cause longer hospital stays and additional health care costs (Digwell, 2007; Kahigian, 2014; Kane & Kane, 2005; McGuire, Klein, & Cooper, 2005; Tagliareni et al., 2012). In a more recent systematic review of registered and student nurses' attitudes towards older people, Liu, Norman & While (2012) reported that attitudes toward older adults seemed inconsistent and slightly less positive since 2000. Due to the conflicting results found in the literature on attitudes toward older persons, the research will be reviewed more thoroughly in the following sections.

Negative Attitudes

Attitude toward older adults seems to differ from the attitude towards other patients. This may be because older people generally have more than one illness, therefore requiring more professional or institutional care and demonstrating more dependence on others to carry out activities of daily living (Kilic & Adibelli, 2011). This is important because the Bureau of Labor and Statistics (2014) reports that the largest increase in employment for nurses is expected to be seen in nursing care facilities, physician offices, and home health, while the lowest will be in hospitals. As a result of the expected growth in the aging population, all of these clinical practice areas will see an increased number of aging adults and require competent nurses with positive attitudes toward older persons.

Although there is a growing need for nurses with gerontological skills, the literature states that negative attitudes about aging may be affecting student nurses' career choices, with many students choosing other employment areas of nursing such as critical care, surgical, or pediatric nursing (Ferrario et al., 2008; Flood & Clark, 2009; McKinlay & Cowan, 2006; Wesley, 2005; Williams, Nowak, & Scobee, 2006). A review of the literature suggests that the role of caring for the elderly has historically been negatively viewed as requiring limited skills, being boring, and offering few advancement opportunities. In two interpretive Hermeneutic studies, Robinson and Cubit (2007) and Alabaster (2006) found that students associated discomfort with touching and caring for older bodies with fear of aging, as well as thinking of the older person as more disadvantaged. In an earlier longitudinal study of nine programs of nursing in Australia, Happell (2002) found that students viewed working with older people as the least preferred area of practice. Interestingly, Happell (2002) also found that popularity of older people care actually declined throughout the nursing education process. This is further evidenced by other researchers. Wells, Foreman, Gething, & Petralia (2004) in a cross sectional study using multiple sites from 20 organizations and Williams et al. 2006) in a single group experiment with 1st year nursing students from two programs in one university both found that nursing education, with its focus on scientific concepts and technical skills may cultivate a more negative attitude or "ageism" among all medical profession students. Multiple studies support that students feel that the care of older persons as a professional choice is viewed as lacking status, requires heavier workloads, needs too much documentation, and receives less pay (Abbey et al., 2006; De La Rue, 2003; McGarry et al., 2009; Robinson & Cubit, 2007;

Valencia, Hannan & Stein, 2005). Additionally, De La Rue (2003) and Robinson and Cubit (2007) associated the devaluing of older person nursing in their studies with ageism. Ageism is operationally defined as an attitude that discriminates, separates, stigmatizes, or otherwise disadvantages older persons based on chronologic age (Mosby, 2013). Negative attitudes toward older persons do not always lead to ageism (Nelson, 2005). Although, ageism is indeed found in some research studies. While other research studies show ambivalent and neutral feelings and attitudes toward older persons.

Ambivalent and Neutral Attitudes

Although multiple studies have presented traditional findings of overall negative or positive attitudes toward older adults, additional studies are showing evidence of participants with neutrality or ambivalence toward aging or older adults. For example, Williams et al. (2006) in a qualitative study of 32 senior level baccalaureate students in the Midwestern United States found that while most students had more overall positive attitudes towards older persons, they also somewhat feared aging themselves and/or found it difficult to separate their view of aging from more negative societal beliefs about older persons. This outlook was also evident in a study by Bernsten et al. (2010) who explored 74 first year BSN students in Norway and found that although students perceived learning in aged care setting moderately positive, students had little desire to work with older persons upon graduation. Additionally, some qualitative studies have found similar results. Abbey et al. (2006) also found ambivalent and more neutral feelings when exploring 14 undergraduate nursing students' attitudes about clinical placement experiences using semi structured interviews in Australia. Similarly,

McLafferty, Dingwal, & Halkett (2009) found that 17 student nurses had varying attitudes toward older adults in a focus group study in Scotland involving nurses and nurse educators. Some students found experiences in older adult settings more positive, yet stated the effect of these experiences tended to turn them away from an older adult specialty and contributed to a more overall neutral or negative opinion of older adults. In a larger study with 194 participants, Chen and Walsh (2009) studied fourth year nursing students from one nursing program in China using the revised Kogan KATOP tool and found unclear, yet neutral overall attitudes in both the control and intervention groups. Likewise, Koren et al. (2008) studied 200 student nurses in one university in the United States using a cross sectional design and the AGED Inventory and found mostly neutral attitudes toward older patients. All of the mentioned studies have small sample sizes and are mostly single site studies which limit their generalizability. However, other research shows that students hold more positive attitudes toward older persons.

Positive Attitudes

Conversely, other studies report that nursing students' attitudes toward older persons are positive (Burbank et al., 2006; Celik et al., 2010; Erdemir, Kav, Citak & Karahan 2011; Heise et al., 2012) McKinley & Cowan, 2003; Shellman, 2006; Wang et al., 2009). Students with more positive attitudes will be more understanding and accommodating when working with older persons (King, Roberts, & Bowers, 2013; Kirkpatrick & Brown, 2006). In a focus group study by Celik et al. (2010), a majority of nursing students, 66%, stated that they felt patient, positive, cheerful, and sensitive while caring for older persons. Several studies suggest that there is a strong, statistically significant, correlation between positive nursing student attitudes, many targeted

learning exercises, and that these positive influences in the clinical environment thereby may affect student attitudes (Blais et al., 2006; Holroyd et al., 2009). In one such qualitative study in the Northeastern United States, Shellman (2006) explored 41 BSN students' perceptions of the reminiscence interaction between students and older adults and found that students often reported positive feelings and a connection with their clients. Similarly, McGarry et al. (2009) conducted 4 focus groups in early clinical placements which suggested themes of seeing, connecting, and forming of caring values with the patient. Erdemir et al. (2011) used a cross sectional survey format to examine 177 nursing students, 108 nutrition students, 88 physical therapy students, 99 social worker students, and 63 health management students from one university in Turkey using the Kogan KATOP and found that student nurses had the most statistically significant, positive attitude toward older people. In a much older study, Fox and Wold (1996) found improvement in 144 senior nursing students' attitudes with a capstone course concentrated in gerontological concepts and clinical experiences. This study used a four- question survey and was limited by the variety of staff, faculty, and clinical experiences used, possibly affecting student response. King et al. (2013) conducted a longitudinal mixed method study that investigated change in student nurses' attitudes (N=80) toward older adults over the course of their nursing program. The KATOP and focus groups were used to measure student attitude at four points in the nursing program. The researchers found that the students started the program with highly positive attitudes toward older persons and continued to become more positive over the course of the study. Wang et al. (2009) studied attitudes toward old people of 84 nursing students and 191 medical students from one university in Taiwan using the

Kogan KATOP. Overall, nursing students had a more positive attitude toward older people than medical students and female, younger nursing students had a more positive attitude than male, older medical students. Yet old or new, in many different countries and nations, studies have consistently been hampered by small sample sizes, single sites, and/or the use of one specific curricular change to measure nursing students' attitudes toward older adults (Chen & Walsh, 2009). Erdemir et al., 2011; McGarry et al., 2009; Shellman, 2006; Stewart et al., 2005). As seen in the previous sections, the literature is very contradictory about nursing students' attitudes toward older persons. The research consistently shows that there is a crucial need for more, well designed research studies of nursing students and the associated factors needed to improve geriatric care and workforce strategies.

Demographic Factors

In many studies, demographic variables were often investigated. Various demographic factors have been found to influence and impact knowledge of aging and attitude toward older adults. Although, there appear to be some contradictory findings in the literature when looking at demographic variables such as age, gender, race, ethnicity, marital status, residence, or nursing programs and their curricula.

Age

The NLN Biennial Survey of Schools of Nursing for the academic year 2013-2014 was reviewed to see the overall statistics of age in nursing programs. Most students are under age 25 when attending nursing programs. This information will later be used to analyze findings from this study. When reviewing the literature about age and attitude toward older adults, some studies have found that students' age affects their

attitudes toward the elderly, with younger students having more positive attitudes (Hweidi & Al-Obeisat, 2006; Liu et al., 2012; Wang et al., 2009). In one such study, Berntsen (2010) found that Norwegian nursing students under 25 years of age had a more positive attitude toward older adults and older adult clinical experiences. The older participants of the study had an increasingly overall negative attitude. Similarly, Holroyd et al. (2009) found the older 26-33 year age group had the most positive attitudes toward the elderly in their longitudinal study of 197 nursing students from one college in Canada. In a more recent Iranian study, Shojaei and Masoumi (2014) compared the attitude of 57 second and 33 fourth year university nursing students toward hospitalized older adults and found a more positive attitude in the fourth-year student, and that age ($P < 0.057$) can be predictive of attitude toward older adults. Conversely, Flood and Clark (2009) examined baccalaureate nursing students attitude toward older persons using a sample which included 3 first-year students, 24 second-year students, 15 third-year students, and 8 fourth-year students for a total of 50 students, ranging in age from 18-28 years ($M = 20.78$ years).

Nursing students are often of younger adult age while in nursing programs which makes the conduction of certain correlational studies difficult. Therefore, some studies found a correlation between age and students' attitude toward aging which was not statistically significant (Hweidi & Al-Obeisat, 2006; Karlin, Emick, Mehls & Murry, 2006; King et al., 2013; Koren et al., 2008; Pan et al., 2009; Ryan & McCauley, 2004/2005; Soderhamn et al., 2001). For example, King et al. (2013) conducted a longitudinal mixed method study that investigated change in student nurse attitudes ($N=80$) toward older adults over the course of their nursing program utilizing the

KATOP and focus groups to measure student attitude at four points in the nursing program. The researchers found that the students started the program with positive attitudes toward older persons and continued to become more positive over the course of their study over the 2 years, but that there was no significant correlation between age and students' attitude toward aging. Further study is needed to explore the relationship of age and attitudes toward aging with larger populations from multiple sites.

Gender

Gender was a significant variable in many studies, from a variety of countries, that explored attitudes toward older people (Bleijenberg, Jansen, & Schuurmans, 2012; King et al., 2013; Liu et al., 2012). The demographic factor of gender frequently couldn't be studied past descriptive statistics or yielded conflicting results, due to the high percentage of female nursing students. Almost half of the studies reviewed, associated male gender with more positive attitudes toward older adults (Holroyd et al., 2009; Shojaei & Masoumi, 2014), while others reported the opposite results (Bleijenberg, Jansen, & Schuurmans, 2012; King et al., 2013; Liu et al., 2012), and the remainder found no significant gender difference in attitude (Flood & Clark, 2009). Holroyd et al. (2009) found that males appeared significantly more positive in attitudes toward older persons than females, but there was a small sample of males (19 out of 246). Flood and Clark (2009) found no significant gender difference in attitudes toward the elderly in their cross sectional exploratory study of 110 BSN students in a North Carolina university. The consistently small percentage of male students in both nursing and nursing research studies make it hard to generalize findings of gender and attitudes

toward older adults. Possibly, larger samples are needed in future research to capture a larger male representation.

Marital Status

No studies were found that explored marital status of nursing students with attitude or knowledge of older adults. A few studies used marital status as a demographic and an independent variable when doing hierarchical multiple regression or correlation, but it was never statistically significant and usually only reported as a descriptive statistic (Hsiu-Chin & Huan-Sheng, 2016). This could be anecdotally associated with most nursing students being single and the average age of a nursing student being less than 25 years. Additional research in this area is needed to explore the relationship further.

Race/Ethnicity

Other variables that may explain attitude toward older adults are race and/or ethnicity. When looking at RNs that care for older adults in an acute care setting, African American and Asian RNs traditionally reported more negative attitudes toward older adult than Caucasian RNs (Eymard & Douglas, 2012; Higgins, Van Der Riet, Slater, & Peek, 2007). The ethnic diversity in nursing students is lower when compared with the diversity of the nursing population and the overall population of the United States, but is slowly on the rise (AACN, 2016). Many nursing studies investigate nursing students' attitudes and knowledge of aging, but only occasional studies look at ethnicity and race as a factor.

In an older nursing student study, Ryan and McCauley (2004/2005) reported more positive attitudes toward older adults by Hispanic students in their descriptive,

study of 55 Hispanic versus Black baccalaureate nursing students from one university in the United States. In another study, Flood and Clark (2009) found no significant racial differences in attitude or knowledge in 110 racially diverse, baccalaureate students in a North Carolina university. Participants of the study were from three different courses; two of the courses contained non-nursing students and one course were nursing students. All completed the Palmore's Facts on Aging Quiz multiple choice version and the Burbank, McCool, and Burkholder Perspectives on Caring for Older Patients Scale. The researchers found no significant racial differences in the scores of either tool for any participants from any of the three courses. In a study using only nursing students, Holroyd et al., (2009) found no significant differences in attitude toward older persons due to ethnicity (Caucasian, Asian, Aboriginal, and Other) in a baccalaureate nursing program using 197 freshmen, sophomore, junior, and senior students in Canada. In a more recent study, Lee (2015) used a cross sectional sample of 308 students in one university. The multiple regression analysis showed that race/ethnicity were the strongest variable to explain negative attitude toward older persons. The White and Asian students showed no significant differences in positive attitudes. Although the White group had significantly less negative attitudes ($M = 40.7$ versus $F = 30.2$, $p < 0.05$) than the Asian group. Additionally, the Asian students were more uneasy talking with older adults and were found to have a more negative attitude. Overall, multiple regression analysis did show that race/ethnicity was the strongest variable to explain negative attitudes for aged adults in these 308 students (Lee, 2015). Further research is needed to explore further the relationship with race or ethnicity and attitudes toward older adults.

Type of Nursing Program

Education was a highly-investigated variable in nursing students' attitudes toward older adults that also showed inconsistent results. The qualifications and required level of education for nursing has been widely debated by nurses, academics, nursing organizations, and other stakeholders for more than 40 years (IOM, 2010). Education is the foremost variable found to have a consistent, positive difference to levels of knowledge (Palmore, 1998). Nursing research has been conducted to explore knowledge and attitude of nursing students at the diploma, associate, and baccalaureate degree levels in the United States and globally.

Furlan, Craven, Ritchie, Coukos, and Fehlings (2009), Karlin et al. (2006) and Lambrinou et al. (2009) found a positive ($p < 0.05$) association between higher levels of education and positive attitudes toward older adults by participants. Furlan et al., (2009) used a cross sectional observational design in an acute care and a rehabilitation unit to evaluate attitudes of RNs caring for older adults with a spinal cord injury. Using the KATOP, results showed that nurses working in acute care and holding a lower level of education displayed a more ageist attitude than the rehabilitation RNs who held a higher level of education ($p < 0.03$). Lambrinou et al. (2009) evaluated the effects of nursing students' education on attitudes and knowledge of aging in a technical education institute in Greece ($N=227$). More positive attitudes were found in the final year students ($p = 0.62$). Knowledge was only found to be better in final year students, in relation to physical health ($p = 0.022$).

Conversely, Holroyd et al. (2009), Koren et al. (2008), and Pan et al. (2009) reported no association between education level and attitudes toward older adults in their

research studies. Koren et al. (2008) found no association between education level and attitude towards older adults when they studied 200 student nurses in one university, in the United States. Using a cross sectional design and the AGED Inventory, the researchers explored student perceptions of learning needs and attitudes for caring for older adults and found mostly neutral attitudes toward older patients.

The Future of Nursing: Focus on Education, an IOM report published in October of 2010, states that although a BSN education is not a magic potion for all that is expected of nurses in the future, it does introduce nursing students to a wider array of competencies in areas such as health policy, health care finances, community and public health, quality improvement, systems thinking, and leadership than other educational levels. The report further notes that an increase in the percentage of nurses with a BSN to 80% by the year 2020 would create a workforce better equipped to meet the demands of older adults, as well as individuals poised to achieve master's and doctoral degrees required to serve as primary care providers, nurse researchers, and nurse faculty. Therefore, further exploration of the relationship of educational level and attitude toward aging is needed.

Desire to Work With Older Adults

Research in collecting and understanding student nurses' attitudes toward and preferences for working with older adults can be traced back for many decades. With the population of people over the age of 65 expected to double worldwide by 2050, from 600 million to 2 billion (World Health Organization, 2012), the need for nurses trained in gerontology is greater than ever before. Yet, negative perceptions or stereotypes of

aging displayed by some practicing nurses are often barriers to choosing gerontological nursing as a career or nursing specialty.

In a study using postal surveys, focus groups, and case studies of clinical placements, Brown, Nolan, Davies, Nolan, and Keady (2008) found that the quality of clinical placements during an undergraduate educational program influenced the career choices of nursing students in their 3 ½ year longitudinal study. The findings also reinforced that if clinical placements were in environments where nurses used high standards of care and had positive attitudes toward older persons, students expressed a more positive view of geriatric nursing.

Only about 2 percent of newly graduated nurses report that they will specialize in geriatrics (Abbey et al., 2006; Aud, Bostick, Marek, & McDaniel, 2006; Gillis, MacDonald, & MacIsaac, 2008; Hayes et al., 2006; Henderson et al., 2008; King et al., 2013). Among reasons given were lack of preparation, inadequate clinical experiences with substantial focus on older adults, less pay in long-term care, and shortage of role models. In the Henderson et al. (2008) study, results show that while first level nursing students have a more positive attitude of old persons overall, they do not wish to work with them. The reasons cited by these 262 students were poor experiences of providing older person care at the clinical facilities, an inability to relate to or communicate with them, and a perception that the work itself is depressing and boring.

In a different study, Raudonis, McLean and Caubel (2012) discussed the need for students to connect with older adults in their clinical experiences to form more positive gerontological nursing opinions. Although a formal study was not conducted, the faculty described a Life Review assignment for undergraduate nursing students that had

been conducted for more than ten years in a nonclinical course in their program. The Life Review assignment was conducted in both face to face and online formats. The purpose of the assignment was to develop and refine students' communication skills, as well as their one to one interactions with an adult over the age of 70 years, in the community, to examine successful aging prior to their clinical experience. Written comments by the students over the ten years continually supported the value of the assignment to increasing nursing students' knowledge and attitudes toward older adults (Raudonis et al., 2012).

Educational Factors

Type of Gerontological Content

Even after decades of recognizing the need for gerontological content at the undergraduate nursing level, all nursing programs still have not included more gerontological content in their programs. In fact, integration versus stand-alone gerontological content is a subject of continuing debate (Gilje et al., 2007; Gebhardt, Sims, & Bates, 2009). Research consistently shows that there is a shortage of faculty with gerontological education which often impedes the necessary integration of gerontological coursework into many nursing programs' curricula (Buttner, 2008; Grocki & Fox, 2004; Hancock et al., 2006; Koren et al., 2008). In a Belgium study conducted with 17 baccalaureate nursing programs to identify the coverage of gerontological care in BSN programs, Deschodt, Casterle, and Milisen (2010) found "lack of interest in care for older people in general, lack of gerontology-related competencies within curricula, and a negative image of gerontological care were reported as the most frequently-encountered barriers to incorporating gerontological care

aspects into curricula” (p. 139). In an older study, Rosenfeld et al. (1999) surveyed 480 baccalaureate nursing programs in the US. Similarly, they found that 60% of programs felt that they had a lack of gerontology related competencies and a need to strengthen their curriculum and faculty development in gerontological nursing.

A mid-Atlantic study in a baccalaureate nursing program found that approximately 50% of nursing programs lack a gerontology course taught by a gerontology certified faculty, only 5% of nursing faculty have gerontological nursing expertise, and less than 10% of student nurses clinical hours occur in a gerontological focused setting (Holroyd et al., 2009). Research suggests a similar lack of gerontological nursing educators internationally (Abbey et al., 2006; Berntsen & Bjork, 2010; Celik et al., 2010). Additionally, national and international committees have acknowledged and provided suggestions for the growing need to teach pre-licensure nursing students gerontology skills with the onset of various, gerontological initiatives (American Association of Colleges of Nursing (AACN), 2008; AACN & The John A. Hartford Foundation Institute for Geriatric Nursing, 2008; National League for Nursing, 2008; Pew Research Center, 2005).

Literature further suggests that there is a trend of increasing gerontological content in nursing programs, despite the fact that it has never been determined if it is better to have a stand-alone course or to integrate gerontological content in multiple courses (Wallace, Lange & Grossman, 2005). Some research shows that the integration of gerontological content in non-geriatric undergraduate nursing courses is increasing (Celik et al., 2010; Hancock et al., 2006). Further research is needed to determine if the way gerontological content is provided is predictive of knowledge on aging and nursing

student attitudes toward older persons. The three most common ways of providing gerontological content are stand-alone courses, integrated courses, or a combination of both stand-alone and integrated courses in nursing programs. When using a stand-alone gerontology course, the curricula is arranged so that nursing students are either recommended (as an elective) or required to take a separate course on aging and its components in healthcare. Integrated nursing content requires that a certain percent of gerontological content is spread out into multiple courses in the nursing program (Gilje et al., 2007)

Stand-alone course. Some research shows that the presence of a stand-alone gerontology course is more desirable and signifies its importance in the curriculum, although only 23% of baccalaureate nursing programs have a stand-alone gerontology course. In one such study, Wallace et al. (2005) advocates for a standalone course in baccalaureate nursing programs. Scott-Tilley, Marshall-Gray, Valdez and Green (2005) also support integration of long-term care concepts into BSN programs after a study at the Texas Tech University Health Sciences Center's Baccalaureate School of Nursing. Eighty-seven percent of the students surveyed, agreed their integrated didactic experience adequately prepared them for the care of older adults. Research supports that some nursing programs are integrating gerontology content throughout the curriculum (Blais et al., 2006; Hancock et al., 2006), while other programs are including a separate gerontology course (Koren et al., 2008; Wesley, 2005). In both cases, literature strongly supports that nursing faculty who teach about the population over 65 years of age be adequately prepared in gerontological nursing (Berman et al., 2005; Grocki & Fox, 2004; Plonczynski et al., 2007).

Ironside et al. (2010) examined how the care of older adults was being taught to 531 nursing students in five associate degree programs using a survey and focus groups. Five percent of respondents indicated that geriatric content and experiences were in standalone specialty courses. Of these respondents, 53% indicated the course usually occurred in the first year of the associated degree programs and 47% reported that geriatric content was taught in the second year. Berman et al. (2005) similarly reported that 69% of baccalaureate programs (BSN) with standalone geriatric courses required their students to take the course and in the beginning of the program. Gilje et al. (2007) conducted a national mail survey of all accredited AACN baccalaureate programs that resulted in 202 responses which showed that only slightly more than half of BSN programs they surveyed offered a standalone geriatric course and that of them 76% required the course and 24% offered it as an elective. Nothing definitive has been found saying that stand-alone geriatric courses are the best way to give students this critical content. Yet, there is research showing that some nursing programs offer the geriatric content throughout their course of study.

Integrated throughout program. A review of the literature supported that almost half of the undergraduate nursing programs appear to have gerontological content integrated into one or more courses (Grocki & Fox, 2004; Hancock et al., 2006; Ironside et al., 2010; Plonczynski et al., 2007; Regenstreif, Brittis, Fagin & Rieder, 2003). Wells et al. (2004) found more positive attitudes in nurses with gerontological education than those without specific gerontological education, in their Australian study exploring attitudes toward aging and older adults among healthcare providers and nursing students.

In the previously mentioned Ironside et al. (2010) study which examined how the care of older adults was being taught to 531 nursing students in five associate degree programs, 50% of those studied had integrated gerontological content through the curriculum. The majority of respondents (80%) indicated that both geriatric content and clinical experiences were integrated throughout the curriculum. These findings were consistent with a similar study conducted by Berman et al. (2005) which reported that 92% of baccalaureate programs integrated geriatrics into one or more courses with the majority being presented in adult health and fundamental courses. Conversely, other researchers have found less than 30% of nursing education programs have stand-alone gerontological courses (Berman et al., 2005; Grocki & Fox, 2004). Gilje et al. (2007) reported that only slightly less than half of the BSN programs that they surveyed from 45 states offered integrated gerontological content.

Both stand-alone and integrated throughout the program. Occasionally nursing programs will have both a stand-alone gerontology course, as well as older adult content, woven throughout some or all of the nursing courses (Deschodt, deCasterle, & Milisen, 2010). In the previously mentioned study by Ironside et al. (2010), 15% of those studied indicated that their geriatric content was a combination of standalone courses and integration. Of those studied, respondents reported that 17% - 35% of the gerontological content was contained in each of the major courses and clinical (adult health, pharmacology, and mental health). In addition, the data showed that the largest exception to this were fundamentals courses with more than 50% of the content devoted to geriatrics. Berman et al. (2005) compared findings in baccalaureate nursing programs before and after the gerontological initiatives and reported increased gerontological

content in a greater number of courses with both stand alone and integrated curriculum. All these years later, the findings in the literature support the need for more extensive research in how gerontological content is delivered to students in their nursing programs, as well as how it may affect their knowledge and attitude toward older adults.

Type of Clinical Settings

Clinical placements are an important part in the learning process of nursing students. These clinical experiences may influence attitudes towards different groups of clients. Literature tends to support that positive clinical experiences, with older adults, may influence career choices after graduation (McLafferty et al., 2009; Robinson & Cubit, 2007; Shellman, 2006; Williams, Nowak & Scobee, 2006). Research frequently shows that the impact of where and how nursing students received their fundamental, gerontological clinical experiences is often linked to better nursing students' attitudes towards older adults (Robinson & Cubit, 2007; Shellman, 2006; Williams, Nowak & Scobee, 2006). In other studies, where students had their clinical experiences showed either no effect or a worsening effect on students' attitudes (Celik, et al., 2010; Happell, 2002; Henderson et al., 2008). Contrasting results could stem from how nursing clinical contact is measured by the researcher since studies frequently use how often students interact with older adults instead of describing the type of interaction that occurs in a typical clinical day (O'Hanlon & Brookover, 2002 Henderson et al., 2008).

Clinical experiences with substantial gerontological contact. In one study, O'Hanlon and Brookover (2002) included "elements of context, cooperativeness, intimacy, status, and voluntary nature of the contact" in their study of two gerontology classes, one sophomore and one senior (n = 55 students) to better measure

gerontological contact (p. 713). Students completed the Aging Semantic Differential scale and a self-report tool on beliefs about older adults before and after conducting a structured life history interview with older adults. Although there is a small sample size, the researchers found that the best predictor of attitudes toward older adults is the quality of the interaction between the student and the client, not the frequency or length of the interaction (O'Hanlon & Brookover, 2002). Similarly, Green and Dorr (2016) also reported that quality contact with well elderly in positive conditions has a lasting effect on nursing students' attitudes toward older adults when they examined whether a simulated aging activity would cause more positive attitudes and an increased desire to help older adults.

In an older study of 144 baccalaureate nursing students at one nursing program, Fox and Wold (1996) found that a senior capstone course with multi-site, independent, innovative projects produced positive attitudes and heightened consciousness regarding gerontological nursing. In a more recent study, Burbank et al. (2006) found that student involvement in a senior mentor project as part of a course on promoting successful aging tended to coincide with more positive student attitude toward older adults. Similarly, Quinn et al. (2004) found that the results of home visit clinical experiences in a gerontological learning activity, in a baccalaureate nursing program, improved student nurses attitudes.

In a more recent study, Ironside et al. (2010) documented that when nursing students first encounter older adults as a fundamental care assignment, the complexity of the care needed is often overlooked and in the students' minds associated with basic nursing skills. They report that these first experiences may leave lasting impressions on

attitudes toward the older adult and future career choices. The study examined how the care of older adults was being taught to 531 nursing students in five associate degree programs using a survey and focus groups to evaluate attitudes toward older adults. Moreover, Henderson et al. (2008) recounted that many students in their first-year nursing project who had reported previous experience working with older adults, demonstrated more positive attitudes towards aging (N=262 students). This suggests that positive exposure to older adults may diminish ageist views and negative attitudes.

Clinical experiences without substantial gerontological contact. As previously mentioned, few research studies in nursing education distinguish the frequency of contact from the quality of contact in examining student nurses' attitudes toward older persons. Studies that have been done are more apt to assess whether a specific clinical project affects student attitude of older adults (Abbey et al., 2006; Franklin et al., 2011; Henderson et al., 2008). This gap in the literature results in an ambiguity of the true impact of substantial or unsubstantial clinical experiences with the older adult care on students' attitudes.

Nursing Students' Knowledge of Aging

Although there is a growing need for nurses with gerontological skills, research strongly suggests that graduate nurses lack gerontological knowledge (Abbey et al., 2006; Flood & Clark, 2009; Jansen & Morse, 2004; Plonczynski et al., 2007; Robinson & Cubit, 2007). Older persons have reported students making assumptions about their level of wellness or frailty based upon their age, rather than knowledge of them as individuals (Jansen & Morse, 2004). Abbey et al. (2006) and Celik et al. (2010) found that students reported a lack of gerontological knowledge when entering the residential

care environment, as well as feeling that they were unprepared for the complicated needs of the older persons in these environments. Students often report negative thoughts due to frequent sickness, increase in care requirements, and an escalation in cognitive decline (Flood & Clark, 2009; Williams, Nowak & Scobee, 2006). Celik et al. (2010) conducted a qualitative focus group study of 42 BSN students determining the views and attitudes of nursing students toward older patients. They found that 43% of the participants had cared for older patients in their homes, hospital, or long term care facilities. One student exemplified the negative attitudes and unpreparedness by stating that “ageing is a preparation period for death” and “not feeling prepared to deal with it” (Celik et al., 2010, p. 26). Whereas, Abbey, et al. (2006) in a descriptive, qualitative pilot study had students report feeling “there is more of a lack in nursing’s core skills of caring”; stated that “older person nursing was emotionally hard to get used to”, felt that “they lacked a proper pre-placement orientation”; felt “staff didn’t care at all about them or the residents”, felt “little “technical” care can be taught in a long-term care setting”, and often felt “powerless” in their thematic evaluations (p. 16).

Knowledge and attitudes may affect the way in which nurses care for or approach their clients. Knowledge of aging is necessary for nursing students to be future older person care providers. Receipt of accurate information may remedy misconceptions. Research shows that public elementary and high schools rarely educate about aging; higher education tends to focus more on social and health problems in the elderly; and neither type of institution focuses on successful aging (Abbey et al., 2006; Berman et al., 2005; Buttner, 2008). Nurse leaders agree that gerontological content is not receiving enough attention and encourage more research in these areas (Berman et

al., 2005; AACN, 2008; AACN & The John A. Hartford Foundation Institute for Geriatric Nursing, 2008; Ironside et al., 2010; Pew Research Center, 2005).

Education on aging has been found to be effective, even after a one month period of elapsed time in a study by Stuart-Hamilton and Mahoney (2003). The researchers examined the effects of an educational workshop held in England with 200 hospital employees using two tools: the Palmore Facts on Aging Quiz and the Fraboni Scale of Ageism. The researchers found that study participants did in fact use less ageist language and recollected more about aging for at least one month ($p = 0.856$), but actual Fraboni Scale of Ageism attitude measurements were not influenced by the workshop ($p = 0.143$). Klein et al. (2005) conducted a study that similarly supported that opportunities should be provided that include interactions with active, well adults in various settings, especially in schools and nursing schools.

Research over the past decade shows that gerontological studies looking at knowledge of aging have been consistently hindered by small sample sizes and inconsistent, statistically significant results. Past research has yet to show that knowledge of aging affects attitudes towards older persons (Abbey et al., 2006; Alabaster, 2006; Celik et al., 2010; Ferrario et al., 2008; Stewart, Giles, Paterson, & Butler, 2005). It is important that a nationwide study of nursing students be conducted to explore how much gerontological knowledge affects attitude towards aged adults.

Theory of Planned Behavior

The Theory of Planned Behavior has been tested and applied to a multitude of studies that examined attitudes toward behavior, subjective norms, and external variables over the years since it was first created by Ajzen in 1991 (McKinlay & Cowan,

2006; Talbot, Dorrian & Chapman, 2015; Werner, 2012). The Theory of Planned Behavior (TPB) is based upon two major assumptions: “1) that human beings are rational and make systematic use of information available to them; 2) people consider the implications of their actions before they decide whether to engage in certain behaviors” (Clark & Paraska, 2014, p. 55). TPB further suggests that behavior is governed by intent, which is a combination of one’s attitude as to whether performing the behavior will result in a positive or negative outcome, and one’s motivation to meet the perceived expectation(s) of others (Ajzen & Fishbein, 2005). Determinants of intention are attitude towards behavior, subjective norms, and external variables. Ajzen and Fishbein (2005) describe “attitude toward the behavior” as a function of beliefs that lead to certain outcomes. A person’s motivation to meet the perceived expectations of others are known as a “subjective norm”, and such personality traits, attitudes toward people or institutions, and demographic variables that may influence intentions or behavior indirectly, are known as “external variables”. The TPB requires that factors that the participants consider relevant to the formation of attitudes, subjective norms, and perceived behavior control, as well as that the attitude object be clearly defined.

As a general rule, the theory supports that the stronger the intention to engage in a behavior, the more likely the behavior will occur. One study in nursing that used the TPB examined attitudes held by 172 student nurses in three institutions in the United Kingdom by using vignettes that described different nursing behavioral orientations toward older patients (McKinlay & Cowan, 2006). McKinlay and Cowan (2006) found that although participants’ attitudes are the main determinant of behavioral intentions towards older adults, their subjective norms also played a significant role. Student

nurses' attitudes were related to four underlying factors: intolerance, humanism, concern about aging, and social inclusion. Students with a more positive attitude towards older patients showed less intolerance and concern over aging and more humanism. Students also felt that they had a moderately high level of control over those behaviors. This information leads to the formulation of the behavioral model guiding the study.

Behavioral Model

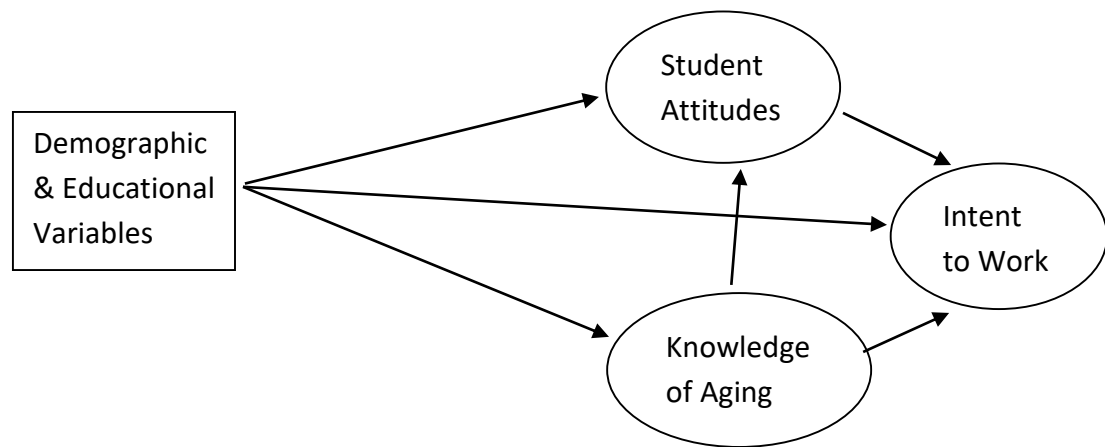


Figure 1. Behavior model adapted from Theory of Planned Behavior Model (Ajzen & Fishbein, 2005)

The researcher's model hypothesized that intentions to work with older adults would be higher among nursing students with more positive attitudes and with more knowledge of aging. According to the TPB, external factors such as educational and demographic characteristics have no direct effect on intention to work, but may influence the direct antecedents of intention and attitude. Furthermore, the researcher hypothesized that student nurses may be more willing to take care of older persons if, after weighing their personal feelings or attitudes, they believe that working with or taking care of the older person will lead to more positive than negative outcomes in

society and that educational and demographic factors may have an indirect effect.

Measurement Tools

Attitudes Toward Aging Tools

The most frequently instruments in educational research to assess attitudes toward older persons are the Kogan Attitudes Toward Older People (KATOP) scale and the Ageing Semantic Differential (ASD) scale (Iwasaki & Jones, 2008; Matarese et al., 2013; Williams, Anderson, & Day, 2007). The researcher chose the KATOP for this research study, a review of this tool will occur next.

Kogan Attitude Toward Old People Scale (KATOP). The Kogan Attitude Toward Old People Scale was developed by Kogan in 1961 and has been consistently used to measure attitudes of students toward the elderly. KATOP uses 17 negative and 17 positive statements about older adults using a Likert type scale. Response categories range from strongly agree to strongly disagree. The scale is used to measure negativity, therefore the lower the score, the more positive the participants' attitudes toward the older person. Over the years, it has been edited to use a 5, 6, or 7-point Likert scale.

Although it has been criticized by some for not being reflective of current changes in views toward aging, advancing medical technologies and social and community environments (Holroyd et al., 2009; King et al., 2013; Rodgers and Gilmour, 2011), a number of translated versions of the KATOP have recently been developed and tested with undergraduate nurses in different cultural contexts and languages. Some examples include: Canada (Holroyd et al., 2009), China (Yen et al., 2009), Greece (Lambrinou et al., 2009), Italy (Matarese et al., 2013), Sweden (Soderhamn et al., 2000), and Turkey (Kucukguclu et al., 2011).

In one such study, Holroyd et al. (2009) found that 179 BSN students in a single Canadian university scored higher on the strongly negative statements in the questionnaire in their comparative cross sectional study. Similarly, Ryan & McCauley (2004/2005) found that 55 BSN students had negative attitudes toward older patients in a New York University. In contrast, Rosher and Robinson (2005) used the Kogan's Attitude Toward Old People Scale (KATOP) to measure nursing students' attitudes toward older adults and reported statistically significant scores showing an increase in positive attitudes toward the older adults when students were reassigned to a nursing home that was redesigned (the Eden Alternative) with plants, animals and where staff were educated about the new concept of housing for the elderly. Rosher and Robinson (2005) reported that many of the nursing students showed an increased interest in gerontology after the positive clinical experiences at the Eden Alternative Nursing Home. In a more historical study by Haight et al. (1994), the researcher studied the change on nursing students' attitudes using two measurement tools: The Semantic Differential Scale and the Kogan's KATOP, after a change in their curriculum to determine whether nursing students' attitudes about older adults changes over time. Both the KATOP and the Semantic Differential Scale found more positive attitudes in the participants initially towards older persons, followed by more negative attitudes by year three of their nursing program.

Internal consistency reliability of the scale ranges from a Cronbach's alpha coefficient of 0.76 to 0.85 in most of the reviewed studies. In the last decade, research studies in nursing and other disciplines, have been conducted in the United States and internationally using Kogan's KATOP with success (Doherty et al., 2011; Holroyd et al.,

2009; Kilic & Adibelli, 2011; Ryan & McCauley, 2004/2005). Kogan's KATOP questionnaire was selected because of its ease of administration, applicability to nursing and its demonstrated reliability and validity in research in many disciplines and in a variety of countries.

Aging Knowledge Tools

Palmore's Facts on Aging Quiz 1. After reviewing tools that measure knowledge of aging in general, one specific tool was reviewed, the Facts on Aging Quiz (FAQ1). The FAQ was originally developed by Palmore in 1976 as a way of stimulating student interest in his course "Social Aspects of Aging" at Duke University. He wanted a 25-item quiz that would take 5 minutes or less to complete that would demonstrate to his students that they had many misconceptions about aging and that there were a lot of interesting facts on aging of which they were unaware (Palmore, 1988, p. ix). The original FAQ1 was a 25-item tool using true and false statements to assess knowledge of aging. Palmore and several researchers used the quiz to measure the effects of lectures, courses, and other training experiences on knowledge of aging by comparing the quizzes before and after scores.

Palmore next developed the second Facts on Aging quiz (FAQ2) in 1981, also in a true and false format, to minimize the "practice effects" of using the same form of the quiz twice. After using them in his class for four years, Palmore claimed both FAQs could be utilized to accurately assess one's beliefs or cognition (knowledge) about the elderly and indirectly measure bias toward the aged. Palmore (1988) defines knowledge of aging as "the amount of general factual information about physical, social, and mental health changes that occur as we age" (p. 36). In his book, *Facts on Aging*, Palmore

(1988) summarizes the detailed results of more than 90 studies using the FAQs. The most disturbing finding, in these studies, is that most people seem to have little knowledge of and many misconceptions about aging. Palmore (1980) found that one of the best ways to reduce negative attitudes is by educating people that hold stereotypical perceptions of aging.

According to Palmore (1992), the two quizzes have been “criticized, revised, defended, and tested every way known to modern psychometrics (p.149). As with all true and false exams, the matter of respondents’ guessing the correct answers to some questions is probably the greatest weakness of Palmore’s knowledge of aging quizzes. This problem of the FAQs has been mentioned by Palmore himself (1980) and by Miller and Dodder (1980). In 1980, to help alleviate the problem of guessing, Miller and Dodder concluded that the FAQ should be modified to contain a third “don’t know” answer. Using this suggestion, Courtney and Wiedmann (1985) conducted a study using a variation of the FAQ1 and FAQ2 which contained the “don’t know” response which showed a reduction in the amount of guessing, but also a decrease in the percentage of correct and incorrect selections on the quizzes. Therefore, in 1992 Harris and Changas modified the FAQ2 to a multiple-choice format with success.

The Palmore’s Facts on Aging Quiz 1 (FAQ1) this researcher is using is a modified version of the original FAQ1. The original FAQ1 was also in a true and false format. It wasn’t until after the FAQ2 was modified that Harris et al. (1996) modified the FAQ1 from a true-false format to a multiple choice format. The tool was used with 501 sociology students divided into two groups. The first group of students (N=230) used the true-false version of the FAQ1. While the second group of students (N=271)

took the new multiple-choice version. The FAQ1 in its multiple-choice format demonstrated greater internal consistency with a mean discrimination index of 0.27. The multiple-choice quiz had an alpha value of 0.15, $p < 0.05$ which shows an increased reliability than its counterpart, as well as increasing the chances that a score accurately represents respondent knowledge level.

Internal consistency, reliability, and discriminating power were frequently tested, over the next 20 years, in the modified version. For example, the FAQ1 was administered to 172 social work students to examine their knowledge about aging issues during their first year of graduate school (Gellis, Sherman, & Lawrence, 2003). The results indicated that the sample mean score was 12.18 (49%) out of a maximum possible score of 25, suggesting a low level of knowledge since students knew less than half of the correct answers.

It is imperative that the tool be used to measure what it is designed to measure; knowledge of aging and not attitudes toward aging. For example, Aud et al. (2006) set out to measure knowledge of aging using the FAQ1 after the completion of a gerontological course, but his results were severely limited by the improper use of the tool since he also measured attitudes toward aging using the FAQ1.

Williams et al., 2007 used the FAQ1 to assess knowledge in a longitudinal comparative study of 81 first year students which were then sampled again in their fourth term along with 54 additional students who had transferred into the program in their third year. There was an improvement in knowledge of age related changes from the first year (mean = 15.20, $t = -1.30$, $p = 0.201$), but the paired sample t test indicated that the change was not significant. In a different study, Flood and Clark (2009)

explored knowledge of aging among 53 nursing and 57 non-nursing students in a single North Carolina University using the Palmore's Facts on Aging Quiz (FAQ1). The researchers found that the FAQ1 measured increased knowledge of aging after gerontological content was provided to the study participants. This education also improved attitude towards older adults. The nursing students scored significantly higher than the other students. Likewise, Ferrario et al. (2008) used the FAQ1 in a descriptive correlational study of 17 senior baccalaureate students in their final term in Illinois and found it measures improved knowledge in the nursing students after a gerontological curriculum change. Similarly, Lee (2015) assessed the intellectual component of nursing students by administering the FAQ1 twice; before and after a community health clinical experience and found that the students' gerontological knowledge improved considerably after the gerontological course.

Conversely, Ryan & McCauley (2004/2005) found that 55 BSN students lacked knowledge about care of the elderly in a New York University using the FAQ1. Hweidi and Al-Hassan (2005) measured knowledge of aging by administering the FAQ1 to Jordanian nurses working in an acute hospital setting and found no significant differences in gerontological intellect among the staff nurses after a seminar on aging. In another study, Cummings, Adler and Decoster (2005) explored general beliefs about the older adults in a European psychology of life cycle course and found that the 382 social work students in the master's program had only moderate knowledge of aging ($M=9.7$, $SD=1.7$), when using the FAQ1.

Summary

In conclusion, studies report conflicting data on knowledge of aging or attitude toward older persons in reference to demographic variables such as age, gender, marital status, and ethnicity. It is urgent that further research be conducted, to explore which factors are most influential in predicting nursing students' attitude toward older persons. The continuing contradictions and gaps support the need to determine if a relationship exists among nursing students' age, gender, ethnicity, marital status, type of nursing program, previous older person care experience, and desire to work with older adults after graduation and the educational variables of type of clinical setting, type of gerontological content, and knowledge of aging to assist nurse educators in gerontological curriculum development.

The rewards of further research in this area may be significant. Older persons could receive better nursing care, graduating nurses may be more competent to meet societal needs, and nurse educators will gain satisfaction in knowing students are ready to meet the needs of older clients in a variety of settings. Therefore, research is needed to find which factors are most influential in predicting nursing students' attitude toward older persons to assist in increasing the number of competent graduating nursing students intending to work with older adults as a career choice.

CHAPTER THREE

METHODOLOGY

The methodology includes study design, setting, sample, potential benefits, instruments, data collection procedures, and sampling plan. The Theory of Planned Behavior provided the framework for investigating the influence of demographical and educational factors on nursing students' knowledge and attitude toward older adults.

Design

This research implemented a descriptive, correlational, cross-sectional survey design using three survey tools. The design is consistent with the purposes of this study which are to primarily explore and describe relationships among variables without necessarily seeking to establish causality (Polit & Beck, 2017). Survey research provides a quantitative description of attitudes, opinions, and trends of a population by studying a sample of that population. A survey is designed to obtain information about the distribution, prevalence, and relationships of variables in a certain population.

More specifically, a descriptive, correlational, cross-sectional survey design was suited to extensive analysis of concepts of a broad nature, such as attitudes towards older persons and knowledge of aging. Survey research obtains data from a sample of people by means of self-report, in which the participants respond to a series of questions or statements. The advantages of using survey research are that it is economical, highly flexible, and well suited to studying attitudes, knowledge, and trends in various population sizes (Bakla, Cekic, & Koksall, 2013; Polit & Beck, 2017). The disadvantages are that the content of a self-report survey can be limited by the extent to which participants are willing or able to report on the research topic being investigated (Polit & Beck, 2017).

The intention of this study was to correlate scores between (1) demographic factors and educational factors and knowledge of aging (2) demographic factors and educational factors and nursing students' attitudes toward older persons and (3) knowledge of aging and nursing students' attitudes toward older persons when controlling for all of the other factors.

Human Subjects/Ethical Issues

Prior to conducting the study, approval was obtained from the Institutional Review Board (IRB) at Indiana University of Pennsylvania. Information on the study, its purpose, risks and benefits, as well as how to withdraw from the study was provided to participants at the beginning of the Qualtrics survey. The target population for this study was prelicensure nursing students enrolled in the final semester of their undergraduate nursing programs in the United States. This sample was selected since most of the gerontology content would have been received by this point in their nursing programs and their attitudes toward older adults should be mostly formed. There are no foreseeable risks, discomforts, or ethical issues associated with this research study. No debriefing of participants was required, but contact information was included so that any student who was upset or felt that they missed gerontology information could be in contact with the researcher after the study was completed. Names were not collected and there was no way to identify the participants with the Qualtrics survey methodology. Participants in this study may have been pregnant, but this was not the focus of the study, nor would this audience have been harmed in any way. Informed consent was obtained at the beginning of the survey in question one. Data was analyzed using the Statistical Package for the Social Sciences (SPSS) 22nd edition software that is provided

at Indiana University of Pennsylvania. All data was anonymous and will be retained in a protected electronic file to ensure compliance with federal regulations.

Setting

A sample of final semester nursing students was recruited from various nursing programs across the United States via an email blast to personal and professional contacts asking them to forward the survey link or post the attached recruitment flyer for their final undergraduate semester nursing students. These professional contacts included faculty known from other nursing programs, peers from networking through LinkedIn, Sigma Theta Tau International, and National League for Nursing, as well as nurse educator peers in university Masters and PhD programs known to the researcher.

Information about the study was made available to the subjects through an electronic link which took them to a Qualtrics survey. The National Student Nurses Association email blast was unable to be utilized as planned, due to the changes in requirements that would have delayed the mailing to after December 2016. The large variety of professional contacts provided the study with an ample accrual of final semester nursing students from different program types and regions in the United States.

The Qualtrics survey asked the subject's demographic and educational information and then contained the two selected measurement tools, *Kogan's Attitudes Toward Old People Scale* and *Palmore's Knowledge of Aging Scale*. As mentioned previously, online surveys are less expensive than traditional paper and pencil surveys and provide an opportunity for participants to be more open and candid while providing an increased sense of control and anonymity (Pallant, 2013). The Qualtrics survey

software was an easy to use, sophisticated web based survey software specifically designed for academic research and used all over the world (Qualtrics, 2015).

Sample

The study utilized convenience sampling to recruit final semester, prelicensure nursing students from various geographical locations across the United States. The target population for the sample of this study was chosen because nursing students should have received some gerontology content and clinical experiences by the final semester in their nursing program. Therefore, their knowledge about and attitudes of older persons should be formulated. Students had the opportunity to choose not to complete or finish the survey without any form of reprisal. Informed consent was obtained at the beginning of the Qualtrics survey.

Power Analysis and Sample Size

To ensure that an adequate sample is available to conduct the analysis, a power analysis was conducted using a power of 0.80 (the probability of not committing a Type II error or wrongly accepting a false null hypothesis) and an alpha level of significance of 0.05 (the probability of committing a Type I error or wrongly rejecting a true null hypothesis) as recommended by Polit & Beck (2017). A power analysis for a multiple regression model with ten predictors indicated that a sample size of 118 was needed to detect a medium effect ($R^2 = 0.13$ or equivalently $f^2 = 0.15$) with high probability (power = 0.80) and a 5% level of significance. To account for factors such as attrition, refusal to participate, and missing data, as well as to increase the probability of obtaining a nationally representative sample the survey remained open until 208 respondents were received. The final sample size, after removing participants with substantial missing

data, consisted of 168 nursing student participants representing students from across the United States.

Recruitment

Because the majority of previous knowledge of aging and attitude toward older adults' research was limited by small regional or single nursing program samples, convenience sampling was used to obtain a larger sample size from throughout the nation. To obtain a larger number of students, various recruitment strategies were employed to contact potential participants. Many professional contacts from various organizations such as Sigma Theta Tau International, National League for Nursing, American Nurses Association, and Linked In, were asked through a personal email to make available the attached flyer (Appendix D) to any pre-licensure nursing students in the last semester of their nursing program throughout the United States. The flyer contained an invitation to go to a website (Appendix I) to participate in a national nursing student study. The flyer also included the purpose of the study, all inclusion and exclusion criteria, risks and benefits, as well as how to withdraw from the study, followed by the link to the study's Qualtrics survey. Information on the study, its purpose, inclusion and exclusion criteria, risks, and researcher contact information was also provided to students at the beginning of the online Qualtrics survey. Students' participation was voluntary and refusal to participate or withdraw from the study at any point did not result in any penalty or loss of benefits. Electronic informed consent was provided at the beginning of the Qualtrics survey and was also assumed by completion of the survey.

Inclusion and Exclusion Criteria

Eligibility and exclusion criteria for study participation was presented at the beginning of the mass emails, on the recruitment flyer, and on the website as follows:

Inclusion criteria. To be included in the research study the student must be:

1. Enrolled full or part time in a pre-licensure nursing program in the United States
2. Currently in the final semester of the nursing program
3. English speaking
4. Have access to a computer

Exclusion criteria. To be excluded from the research study the student would be:

1. Enrolled in any post licensure nursing program
2. Enrolled in any nursing program outside of the United States
3. Registered in any semester of a nursing program except the last semester
4. Non-English speaking
5. Not have access to a computer.

Compensation for Participation

Upon completion of the study, participants had an opportunity to enter into a drawing for a chance to win one of four \$25 Amazon gift cards. The gift cards were used to increase participation in the study. Qualtrics was set up students' participation was anonymous, but still provided the ability to be entered into a random drawing for the gift cards. After completion of the study questions, the students were offered the opportunity to enter a drawing to win one of four \$25 Amazon gift cards. When data collection ended, winners were selected and notified through the email address that the

students separately provided at the end of the Qualtrics survey. The four randomly selected winners were then asked to provide a mailing address. An Amazon gift card was then mailed to each of the four winners. Personal information about participants will be maintained in a protected file in a secure area. There were no alternatives to participation in the form of academic credit or other incentives. Students were under no obligation to participate in this study and were free to withdraw their implied consent at any point in the survey without penalty.

Potential Benefits

The research study allows for a greater understanding of student nurses' knowledge and attitudes towards older persons by nurse educators. The results from this research may enable nurse educators to develop better teaching pedagogies, as well as curriculum revision and better actual or simulated learning environments that may aid in the increase of competent nursing students with a desire to care for older adults. This may lead to an increased quality nursing care of older adults and may decrease the occurrence of geriatric syndromes. Additionally, it may increase the number of future nurse educators, advanced practice nurses, and nurse leaders with gerontological expertise, thereby preventing a gerontological nursing crisis.

Instruments

This study employs demographic and educational questions created by the author followed by two measurement scales: one to assess knowledge of aging and another to assess attitudes toward older persons. Permission to use each tool was obtained from each tool's author first via phone and then by email. Dr. Kogan's email permission is included in Appendix G. Dr. Kogan passed away before being able to provide a formal

permission letter. Dr. Palmore first gave permission by phone and then by email. He later provided a formal permission letter upon request (Appendix H). As previously described in Chapter 2, each scale has been tested with various populations including nursing students. Copies of the scales are included in the appendices as follows:

Attitudes Toward Old People Scale (Appendix A) and the Facts on Aging (Appendix B).

Each tool and the questions will be described further, in the following sections.

Kogan's Attitudes Toward Old People Scale

The Kogan's KATOP (1961) was selected to examine the attitudes of students toward older persons because of its ease of administration and scoring, as well as its validity as an instrument for measuring this construct. To date, many researchers and practitioners have translated and adapted the KATOP for national and international use to assess attitudes toward older persons with moderate to high reliability and validity (Doherty et al., 2011; Flores, 2016; Matarese et al., 2013). The KATOP uses 17 matched-pair statements, 17 negative and 17 positive statements about older adults using either a 5, 6, or 7 point Likert type scale with response categories ranging from strongly agree to strongly disagree. The scale coded responses used in the 5 point Likert scale used by the researcher ranged from: 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, and 5 = strongly agree. To obtain the total KATOP score, scores on the negatively worded items were reverse scored when entered into the Qualtrics survey. The range of scores for the KATOP, using a 5 point Likert scale, is 34 to 170, with a neutral value of 102 and with the higher scores representing a more positive attitude and lower scores representing a less positive attitude toward older adults as established by Kogan in 1961. As previously mentioned in Chapter 2, internal

consistency reliability of the scale ranges from a Cronbach's alpha coefficient of 0.76 to 0.85 in most studies. In the last decade, research studies in nursing and other disciplines, have been conducted in the United States and internationally using Kogan's KATOP with success (Doherty et al., 2011; Holroyd et al., 2009; Kilic & Adibelli, 2011; Ryan & McCauley, 2004/2005). As recommended by Kogan in our phone conversation and email, all statements in the instrument were randomly arranged to minimize subjects' set-bias responses.

Palmore's Knowledge of Aging Scale

The Facts on Aging Quiz 1 (FAQ1), originally developed in 1988 by Palmore to examine the knowledge of health professionals on aging and later modified by Harris et al. in 1996 was chosen because it is easy to administer and score, as well as having a proven strong reliability in measuring knowledge of aging. The multiple choice format was selected because research has shown a substantial decrease in guessing and measurement error and an improvement in the internal consistency and discriminatory power since in its original true and false version (Harris et al., 1996). The Palmore's FAQ1 has a possible score of 0 to 25. It is possible for the responder to obtain the correct answer, a positive bias answer, a negative bias answer, or a neutral answer for each of the 25 questions. Internal consistency reliability of the scale ranges from a Cronbach's alpha of 0.50 to 0.80 in the multiple choice format when used in multiple disciplines and in numerous languages. In the last decade, the FAQ1 has been successfully used to evaluate demographic, social, physical, mental and economic components on aging in nursing in many disciplines in the United States and

internationally (Allan & Johnson, 2009; Baumbusch et al., 2012; Huang, 2013; Lee, 2015; Ryan & McCauley, 2004/2005).

Demographic and Educational Questions

In addition to the scales presented above, the researcher developed demographic and educational questions to collect data about the nursing students' age, gender, race, ethnicity, marital status, type of nursing program, evaluation of substantial older person care clinical experience, type of gerontological curricular design, and desire to work with older adults after graduation. These demographic and educational factors were identified through the literature review in Chapter 2. The first two questions in the Qualtrics survey asked about informed consent. Question 3 asked the student to enter his/her age. Question 4 asked if they were male or female. Questions 5-9 were forced answer questions with multiple options listed about race, ethnicity, marital status, and type of nursing program. Question 10 asked if the student perceived that he/she had adequate patient care opportunities to feel competent providing care to older adults and offered yes or no options. Question 11 asked the student to indicate the specific type of older person care/gerontology coursework you have had during your nursing program and offered options of stand-alone gerontology course, gerontology integrated throughout the program, or both, as well as an additional option of other, please specify. Question 12 asked if they had a desire to work with older adult patients after graduation, in any setting and offered yes, no, and unsure options. These questions were forced responses and were used to describe the sample, as well as for inferential statistics. A copy of the demographic and educational factor questions are included in Appendix C.

Data Collection Procedures

Upon receipt of approval from the institutional Review Board at Indiana University of Pennsylvania, work on the study began with the development of the website and the Qualtrics survey. The intent was to disseminate the study information to a wide geographic range in the United States. Next, recruitment through various peers and professional contacts occurred by personal emails. Then, flyers were placed in all local nursing schools, posted on The Circle of the Sigma Theta Tau International, and placed on my Linked In announcement area. Lastly, monitoring of the subject participation took place. These procedures are further discussed in the coming sections.

Students received an initial email or viewed a flyer with an introductory message listing the purpose of the study, all inclusion and exclusion criteria, risks and benefits, researcher contact information, as well as how to withdraw from the study followed by the study's Qualtrics link or an address to the website to take the survey. Once students entered the Qualtrics survey via either pathway, the first section to be completed was the informed consent questions followed by the ten demographic and educational questions. In the second section were the 34 Kogan's KATOP questions in random order assessing attitude of older adults. The third section that the student completed was the Palmore's FAQ1 which contained 25 multiple choice questions which examined the final semester nursing student knowledge on aging.

After completion of the study questions, the student was offered the opportunity to enter a drawing to win one of four \$25 Amazon gift cards. When data collection ended, winners were selected and notified through the email address that the student separately provided at the end of the Qualtrics survey. The four randomly selected

winners were then asked to provide a mailing address. Their Amazon gift card was then mailed to each of the four winners. Personal information about participants will be maintained in a protected file in a secure area.

Website Creation

A website was created for the study information and a link to the survey. The URL address created was nursingstudentsurvey.ml. The online survey software was created and maintained by Qualtrics TM. The website contained an introduction letter, the informed consent, and a link to the Qualtrics survey. This same URL and information was contained in the distributed flyer (Appendix D). A screen shot of the website's homepage is included in Appendix I.

Monitoring of Participants

Once emails were sent out to the aforementioned peers and groups, the data collection period began and continued for approximately 3 months. The recruitment goal that was set by the power analysis was 118. This goal was passed and the study ended when a total of 206 subjects was reached. At that time, data collection ended and the four incentive drawings occurred. The four winners were notified, the gift cards were distributed, and the website was terminated. All personal information collected for the drawings was maintained and remains secured.

Data Analysis

Initially, inferential and descriptive statistics were performed to look for values that fell outside of the range of possible values (errors or missing data) and to obtain means and standard deviations using the Statistical Package for the Social Sciences (SPSS) 22nd edition software that is provided at Indiana University of Pennsylvania.

Additionally, data were checked to verify that the assumptions associated with the statistical tests of multiple regression were met. For correlation and multiple regression, careful consideration was given to the sample size, non-normality, outliers, and the relationship among all of the independent variables (singularity and multicollinearity) prior to performing multiple regression and hierarchical multiple regression tests. The proposed research questions guided the selection of inferential statistical analyses:

1. What demographic factors and educational factors best predict knowledge of aging?
2. What demographic factors and educational factors best predict nursing students' attitudes toward older persons?
3. What is the relationship between knowledge of aging and nursing students' attitudes toward older persons after controlling for all the other factors?

For the first and second research questions, standard multiple regression was used, which is the most commonly used type of multiple regression. When using this type of analysis, all the predictor or independent variables (e.g. educational and demographic factors) must be entered into the equation simultaneously. By doing this, each independent variable (IV) is evaluated in terms of its predictive power over and above that offered by all the other independent variables (Pallant, 2013). This analytic approach tells how much variance in a dependent variable can be explained as a group or block, as well as how much distinctive variance in the dependent variable (DV) each of the independent variables explains (Pallant, 2013).

For the third research question, hierarchical multiple regression was utilized. When using hierarchical multiple regression, the IVs are entered into the equation in the order based upon the assessment of what it adds to the prediction of the DV after previous variables are controlled for. Then the control for all the other educational and demographic variables was applied to find how well knowledge of aging predicts attitude toward older adults. The relative contribution of each block of variables in the correlation to knowledge of aging was also assessed.

With both types of multiple regression it was important to have a sample size that was large enough or the results are not generalizable. The researcher also checked for conditions such as normality (the residuals should be normally distributed), multicollinearity (shows some relationship with your dependent variable), linearity, homoscedasticity, etc. by inspecting the normal plot of the regression standardized residual and the scatterplot. If outliers were detected by inspecting the Mahalanobis distance, which looks at the variables, then the Cooks was inspected to verify whether or not they influenced the results too much and further action was needed.

Summary

The methodological implementation of this study including the design, setting, sample, variables, instruments, data collection procedures, and data analysis plan were reviewed. This study explored the relationships among demographic factors, educational factors, and nursing students' knowledge and attitudes toward older persons. Descriptive analysis and correlation were used to analyze the data.

CHAPTER FOUR

RESULTS

The following presents the results of the statistical analyses of this study starting with a sample description including demographics, education, descriptive statistics of both the FAQ and KATOP, as well as the analyses of the results when compared to the research questions and hypotheses. The demographic descriptive statistics include age, state of residence, gender, race, ethnicity, marital status of the students. The educational descriptive statistics include type of nursing program, gerontological care opportunities, type of gerontological curriculum, and desire to work with older adults after graduation.

Sample Description

The study subjects included nursing students enrolled in the final semester of their undergraduate nursing program. A total of 206 students participated in the survey and were potential subjects for this study. Some students did not complete the survey or had substantial missing data and were omitted from the statistical analysis. Therefore, the final number of respondents used for the descriptive statistics was 168.

Demographic Factors' Description

One hundred and sixty-eight participants met the criteria and completed all parts of the survey. The descriptive demographic statistics to be included in this section consist of age, state of residence, gender, race, ethnicity, and marital status.

The overall sample (n=168) was predominantly female (83.9%). The subjects' ages ranged from 20-67 years with the majority of the sample (66.1%) below 25 years of age. Table 1 presents a detailed summary of the demographic characteristics of age and gender.

Table 1

Demographic Characteristics of the Sample: Gender and Age

Variable	n	%
Gender		
Female	141	83.9
Male	27	16.1
Age		
20-24 years	111	66.1
20	4	2.4
21	42	25.0
22	32	19.0
23	24	14.3
24	9	5.4
25 years and older	57	33.9
25	8	4.8
26	6	3.6
27	2	1.2
28	6	3.6
29	1	0.6
30	3	1.8
31	5	3.0
32	2	1.2
33	3	1.8
34	3	1.8
35	2	1.2
36	2	1.2
37	1	0.6
38	2	1.2
39	1	0.6
40	1	0.6
41	1	0.6
45	3	1.8
49	1	0.6
52	1	0.6
56	1	0.6
65	1	0.6
67	1	0.6

Note. N=168

Most of the participants were single (77.4%), although some participants were married (21.4%), divorced, or separated (1.2%). The race of the participants was mostly Caucasian (84.9%), although there was representation from the following races: Black (5.4%), American Indian or Alaskan Native (3.6%), Asian (4.2%) and other (1.7%). The

majority of the participants were non-Hispanic (89.9%), although there was a small representation from the Hispanic community (6.5%). Table 2 presents a detailed summary of the demographic characteristics of race, ethnicity, and marital status.

Table 2

Demographic Characteristics of the Sample: Race, Ethnicity, and Marital Status

Variable	n	%
Race		
White	143	85.1
Other	25	14.9
Black	9	5.4
American Indian or Native American	6	3.6
Asian	7	4.2
Ethnicity		
Hispanic	11	6.5
Non-Hispanic	151	89.9
Marital Status		
Single	130	77.4
Married	36	21.4
Divorced/Separated	2	1.2

Note. Total responses ranged from 162-168 due to missing responses. Black, American Indian or Native American, and Asian responses were collapsed into an Other category for multiple regression analyses.

The majority of the respondents resided in the state of Pennsylvania (60.7%), although 28 other states (39.3%) were each minimally represented. The states of residents represented outside of Pennsylvania that had 4-6 respondents was California, Kentucky, New Jersey, Oregon and Virginia. All other represented states had three or less respondents which made it hard to generalize results to any other state or run some of the necessary statistical tests. Table 3 presents a more detailed summary of the demographic characteristics of the respondents' state of residence.

After reviewing the descriptive statistics, the following independent variables were removed from the model before conducting multiple regression due to the sample being skewed: state of residence, ethnicity, and marital status. For example, state of residence has 102 of the 168 respondents residing in Pennsylvania. Multiple regression is very sensitive, makes many assumptions about the data, and is not very forgiving if any of these assumptions are violated. Therefore, since this data is so skewed toward Pennsylvania residents, the results of multiple regression would not generalize to populations other than Pennsylvania. So, only descriptive and frequency analysis was used for state of residence, ethnicity, and marital status in this study.

Table 3

Demographic Characteristics of the Sample: State of Residence

Variable	n	%
State of Residence		
Pennsylvania	102	60.7
Other	66	39.3
Alaska	2	
Arkansas	2	
California	6	
Delaware	2	
Florida	3	
Georgia	3	
Illinois	2	
Indiana	1	
Iowa	1	
Kansas	2	
Kentucky	4	
Maine	2	
Massachusetts	1	
Michigan	2	
Missouri	1	
Montana	1	
New Jersey	4	
New York	2	
North Dakota	1	
Ohio	2	
Oklahoma	1	
Oregon	6	
Tennessee	1	
Texas	2	
Vermont	1	
Virginia	4	

Note. N=168. Percentages are omitted for states that were collapsed into the Other category for the statistical analysis.

After reviewing the descriptive statistics, the following independent variables were removed from the model before conducting multiple regression due to the sample being skewed: state of residence, ethnicity, and marital status. For example, state of residence has 102 of the 168 respondents residing in Pennsylvania. Multiple regression is very sensitive, makes many assumptions about the data, and is not very forgiving if any of these assumptions are violated. Therefore, since this data is so skewed toward Pennsylvania residents, the results of multiple regression would not generalize to populations other than Pennsylvania. So, only descriptive and frequency analysis was used for state of residence, ethnicity, and marital status in this study.

Educational Factors' Description

The educational factors' description included type of nursing program, perception of gerontological care opportunities, type of gerontology curriculum content, and desire to work with gerontology patients after graduation. There were students from bachelor, associate, and diploma programs represented in the study. The majority of participants were from bachelor's programs (76.8%), followed by associate degree programs (19.6%), and lastly diploma programs (3.6%). Most of the participants felt that they had adequate gerontology care opportunities (89.8%) in their nursing programs. The majority of students reported that their gerontological content was integrated throughout their programs (62.9%), a small portion of participants reported a stand-alone gerontological course (6%), while the remainder of participants reported the content was provided both ways (29.2%). When asked if they desired to work with older adults after graduation in any setting, the plurality (41.3%) of respondents stated yes, 29.9% stated no, and 28.7% stated they were unsure. The "No" and "Unsure"

categories were collapsed to run the multiple regression analysis. Table 4 provides a more detailed summary of these education factors' descriptive statistics reported out in the manner the analysis was run.

Table 4

Educational Factors Summary Statistics

Variable	n	%
Type of Program		
Not Bachelor's	39	23.2
Associates Degree	33	19.6
Diploma	6	3.6
Bachelor's Degree	129	76.8
Adequate Care Opportunities		
Yes	150	89.8
No	17	10.2
Integrated Gerontology		
Yes	155	92.1
No	10	6.0
Desire to Work		
Yes	69	41.3
No/Unsure	50	29.9
Unsure	48	28.7

Note. Responses ranged from 167-168 due to missing items. There were 5 "Other" responses in the Integrated Gerontology category: "It was integrated, but..." and "Older adult care integrated" was added to the integrated category for analyses, the other 3 responses were deleted from the analyses. Percentages are omitted for Associates Degree and Diploma as they were collapsed into the Not Bachelor's category for the statistical analysis process.

Instrumentation Results

Participants completed two survey tools: Palmore's Facts on Aging (FAQ1) and Kogan's Attitude Toward Old People (KATOP). In this section, descriptive statistical results from these survey tools will be presented. First, the FAQ1 will be presented, followed by the KATOP. Individual tool tables are included for greater detail of the survey results.

Palmore's Facts on Aging (FAQ1) Descriptive Statistics

The Palmore's Facts on Aging tool contains 25 questions that measure the participants' knowledge of older adults. When using the FAQ1, answers are either correct or incorrect. Respondents could score between 0 and 25 on the FAQ1. Respondents in this study scored between 7 and 21 with a mean score of 12.4 representing only moderate knowledge of aging on the FAQ1 ($M = 12.4$, $SD = 2.62$). Questions that were missed by more than half of the participants include: FAQ7 - "the percentage of people over 65 in long-stay institutions (such as nursing homes, mental hospitals, and homes for the aged) is about 5%." (86.9%); FAQ8 - "the accident rate per driver over age 65 is lower than for those under 65." (74.4%); FAQ9 - "most workers over 65 work as effectively as younger workers." (63.1%); FAQ13 - "depression is more frequent among adults under 65." (63.1%); FAQ16 - "most old people say: they are seldom bored." (83.8%); FAQ18 - "the accident rate among workers over 65 tends to be lower than among younger workers." (75.6%); FAQ19 - "the proportion of the U. S. population now age 65 or over is approximately 13%." (86.3%); FAQ20 - "medical practitioners tend to give older patients lower priority than younger patients." (63.7%); FAQ21 - "the poverty rate (as defined by the federal government) among old people is lower than among persons under 65." (84.5%); FAQ23 - "religiosity tends to be greater in the older generation than in the younger generations." (63.5%); and FAQ25 - "the health and economic status of old people (compared to younger people) in the year 2030 will be higher than now." (63.7%). For the remaining or majority of questions, respondents were correct more than 50% of the time. It is important to note that although the tool is older, the percentages used in the questions were verified by the

researcher and are still correct today. Table 5 provides the FAQ1 individual question response statistics, distributions and summary statistics for all 25 questions in greater detail.

Table 5

FAQ Summary Statistics with Means and Standard Deviations

Statement	n	% of Responses		M	SD
		Correct	Incorrect		
FAQ1-The portion of people over 65 who are senile (have impaired memory, disorientation, or dementia) is:	168	53.6	46.4	0.54	0.500
FAQ2-The senses that tend to weaken in old age are:	168	55.4	44.6	0.55	0.499
FAQ3-The majority of old couples	168	84.5	15.5	0.85	0.363
FAQ4-Lung vital capacity in old age:	168	70.8	29.2	0.71	0.456
FAQ5-Happiness among old people is:	168	74.4	25.8	0.74	0.438
FAQ6-Physical strength:	168	82.7	17.3	0.83	0.379
FAQ7-The percentage of people over 65 in long-stay institutions (such as nursing homes...)	168	13.1	86.9	0.13	0.338
FAQ8-The accident rate per drive over age 65 is:	168	25.6	74.4	0.26	0.438
FAQ9-Most workers over 65:	168	36.9	63.1	0.63	0.484
FAQ10-The proportion of people over 65 who are able to do their normal activities is about:	168	59.5	40.5	0.60	0.492
FAQ11-Adaptability to change among people over 65 is:	167	52.7	47.3	0.53	0.501
FAQ12-As for old people learning new things:	168	76.2	23.8	0.76	0.427
FAQ13-Depression is more frequent among:	168	17.9	82.1	0.18	0.384
FAQ14-Old people tend to react:	165	58.8	41.2	0.59	0.494
FAQ15-Old people tend to be:	168	57.1	42.9	0.57	0.496
FAQ16-Most old people say:	167	16.2	83.8	0.16	0.369
FAQ17-The proportion of old people who are socially isolated:	167	53.3	46.7	0.53	0.500
FAQ18-The accident rate among workers over 65 tends to be:	168	24.4	75.6	0.24	0.431
FAQ19-The proportion of the U.S. population now age 65 or over is approximately:	168	13.7	86.3	0.14	0.345
FAQ20-Medical practitioners tend to give older patients:	168	36.3	63.7	0.36	0.482
FAQ21-The poverty rate (as defined by the federal government) among old people is:	168	15.5	84.5	0.15	0.363
FAQ22-Most old people are:	168	84.5	15.5	0.85	0.363
FAQ23-Religiosity tends to:	167	36.5	63.5	0.37	0.483
FAQ24-Most old people:	168	76.8	23.2	0.77	0.423
FAQ25-Health and Economic Status in 2030	168	36.3	63.7	0.36	0.482
TOTAL FAQ	168			12.4	2.62

Note: M=Mean; SD=Standard Deviation. Responses ranged from 165-168 due to missing items.

Kogan's Attitude Toward Old People (KATOP) Descriptive Statistics

The KATOP is a tool used to measure the respondents' attitude towards older adults. There are 17 positively-worded and 17 negatively-worded responses which were randomly placed in the survey to improve the representation of a true response. For each of the KATOP statements, respondents were told to choose the response that was closest to their opinion. Options ranged from strongly disagree to strongly agree with a middle option of neither agree nor disagree. To obtain the total KATOP score, scores on the negatively worded items were reverse-scored. The range of scores for the KATOP using a 5 point Likert scale is 34 to 170, with a neutral value of 102. Higher scores represent a more positive attitude and lower scores represent a less positive attitude toward older adults as established by Kogan in 1961. In this study, the respondents' scores represented an overall more positive attitude toward older adults ($M = 123.9$, $SD = 12.3$) with individual scores ranging from 89 to 160. Table 6 gives the individual question response distributions, means, and standard deviations. Odd-numbered statements at the top of the table are negatively-worded statements and even-numbered statements are on the bottom half of the table which are positively-worded statements. All statistics for negatively-worded statements in both the discussion and in Table 6 are for the reverse-coded responses, meaning that a higher mean score indicates a more-positive attitude toward older people.

As you can see, most of the matched negative and positive pairs have similar statistics as would be expected. For example, KATOP #3 "there is something different about old people; it's hard to find out what makes them tick" ($M = 3.85$, $SD 0.866$) and #4 "most old people are really no different from anybody else: they're as easy to

understand as young people” ($M = 3.75$, $SD\ 0.817$) as well as, KATOP #7 “most old people would prefer to quit work as soon as pensions or children can support them” ($M = 4.08$, $SD\ 0.889$) and #8 “most old people would prefer to continue working just as long as they possibly can rather than be dependent on anybody” ($M = 4.02$, $SD\ 0.702$), and KATOP #17 “most old people bore others by their insistence on talking about the good old days” ($M = 3.89$, $SD\ 0.754$), and #18 “one of the most interesting and entertaining qualities of most old people is their accounts of their past experiences” ($M = 4.43$, $SD\ 0.585$ have similar statistical results). There is very little difference in the mean or standard deviation, no matter how the question is phrased.

Yet, other pairs do not correspond as well. For example, KATOP #33 “most old people make excessive demands for love and reassurance” ($M = 3.89$, $SD = 0.660$) and #34 “most old people need no more love and reassurance than anyone else” ($M = 2.81$, $SD\ 1.026$) as well as, KATOP #9 “most old people tend to let their homes become shabby and unattractive” ($M = 4.08$, $SD\ 0.728$) and #10 “most old people can generally be counted on to maintain a clean, attractive home” ($M = 3.64$, $SD\ 0.696$). For these questions, respondents answered differently for the positive asked questions versus the negatively asked questions. Respondents often chose the more positively formed response as the response that was closest to their opinion of old people. Further discussion of the research findings and the tools will occur in Chapter 5.

Table 6

KATOP Summary Statistics with Means and Standard Deviations (N=166-168)

<i>Statement</i>	<i>N</i>	<i>% of Responses</i>					<i>M</i>	<i>SD</i>
		<i>Str D</i>	<i>D</i>	<i>NA D</i>	<i>A</i>	<i>Str A</i>		
KATOP 1 "live with people own age"	168	10.7	41.1	27.4	19.6	1.2	3.40	0.962
KATOP 3 "what makes them tick"	168	19.6	57.1	11.9	11.3	0.0	3.85	0.866
KATOP5 "get set in their ways"	168	12.5	36.9	19.6	26.8	4.2	3.27	1.113
KATOP 7 "prefer to quit work"	168	30.4	53.6	11.3	3.6	1.2	4.08	0.889
KATOP 9 "let homes become shabby"	167	25.7	59.9	12.0	1.2	1.2	4.08	0.728
KATOP 11 "wisdom not with age"	167	17.4	63.5	12.6	5.4	1.2	3.90	0.786
KATOP 13 "too much power"	166	9.6	57.2	22.3	10.2	0.6	3.65	0.816
KATOP 15 "make feel ill at ease"	166	25.3	41.6	25.3	7.2	0.6	3.84	0.910
KATOP 17 "talk of "good old days."	168	16.1	63.1	14.9	5.4	0.6	3.89	0.754
KATOP 19 "giving unsought advice"	168	13.1	63.1	19.6	4.2	0.0	3.85	0.689
KATOP 21 "get rid of faults"	168	28.6	54.2	13.1	3.6	0.6	4.07	0.783
KATOP 23 "not too many old live in"	166	25.9	60.2	9.6	3.6	0.6	4.07	0.743
KATOP 25 "pretty much alike"	168	10.7	55.4	19.6	13.7	0.6	3.62	0.874
KATOP 27 "they're too untidy"	167	14.4	70.1	13.8	1.2	0.6	3.96	0.620
KATOP 29 "grouchy & unpleasant"	168	26.8	58.3	10.7	4.2	0.0	4.08	0.734
KATOP 31 "complain of younger"	168	9.5	42.9	23.2	23.2	1.2	3.36	0.981
KATOP 33 "demands for love"	168	13.7	64.3	19.0	3.0	0.0	3.89	0.660
KATOP 2 "live with younger people"	168	1.8	23.4	37.1	33.5	4.2	3.15	0.889
KATOP 4 "no different from"	168	0.0	10.2	18.0	58.1	13.8	3.75	0.817
KATOP 6 "capable of adjustments"	168	2.4	13.8	18.6	58.1	7.2	3.54	0.903
KATOP 8 "prefer to working"	168	0.6	3.0	10.8	64.7	21.0	4.02	0.702
KATOP 10" maintain a clean home"	168	0.0	4.8	34.5	53.0	7.7	3.64	0.696
KATOP 12 "grow wiser with age"	168	0.0	3.0	18.5	67.3	11.3	3.87	0.634
KATOP 14 "more power in business"	168	1.8	21.4	53.6	21.4	1.8	3.00	0.758
KATOP 16 "very relaxing to be with"	168	0.0	6.0	28.0	59.5	6.5	3.67	0.689
KATOP 18 "accounts of their past"	168	0.0	0.6	3.0	49.4	47.0	4.43	0.585
KATOP 20 "give advice when asked"	168	1.2	48.8	29.2	19.0	1.8	2.71	0.849
KATOP 22 "same faults as anybody"	168	0.6	1.2	6.5	75.6	16.1	4.05	0.571
KATOP 24 "old people living in it"	167	0.6	9.0	35.9	49.1	5.4	3.50	0.759
KATOP 26 "very different"	168	2.4	18.5	21.4	47.0	10.7	3.45	0.990
KATOP 28 "clean & neat"	168	0.0	7.7	33.3	51.8	7.1	3.58	0.731
KATOP 30 "cheerful, good humored"	167	0.6	4.8	32.3	53.9	8.4	3.65	0.729
KATOP 32 "seldom complain about"	168	11.9	43.5	23.2	17.3	4.2	2.58	1.041
KATOP 34 "need no more love"	168	6.0	39.9	27.4	20.8	6.0	2.81	1.026
Total KATOP	162						123.9	12.28

Note. Str D=Strongly Disagree; D=Disagree; NAD=Neither Agree or Disagree; A=Agree; Str A=Strongly Agree; M=Mean; SD=Standard Deviation

Research Questions

The study investigated nursing students' attitudes and knowledge of aging while in their final semester of their undergraduate nursing program. To explore the research questions, multiple regression was utilized. This involves placing all the independent variables from the model into SPSS to predict or assess how much unique variance of the dependent variable is explained over and above the other independent variables. The following section will discuss the statistical findings and analysis for each of the three research questions.

Research Question One

Research question one asks "What demographic factors and educational factors best predict knowledge of aging?" The hypotheses follow:

- H_0 : No demographic factor or educational factors has an effect on knowledge of aging.
- H_1 : At least one demographic and/or educational factor has an effect on knowledge of aging.

Multiple regression analysis was used to assess the ability of the independent variables to predict knowledge of aging. The following independent variables were entered into the model: age, gender, race, type of program, gerontological opportunity, type of gerontology content, and desire to work with older adults. Preliminary analyses showed no violations of the assumptions of multiple regression testing. It is important to note that two individuals (code numbers 27 and 117) were identified as outliers; there were large differences in terms of demographics (Mahalanobis Distance > 24.32). Assumptions included normality, linearity, and independence of residuals. The

researcher checked this by inspecting the Normal Probability Plot (Figure 1) and the Scatterplot (Figure 2) in SPSS.

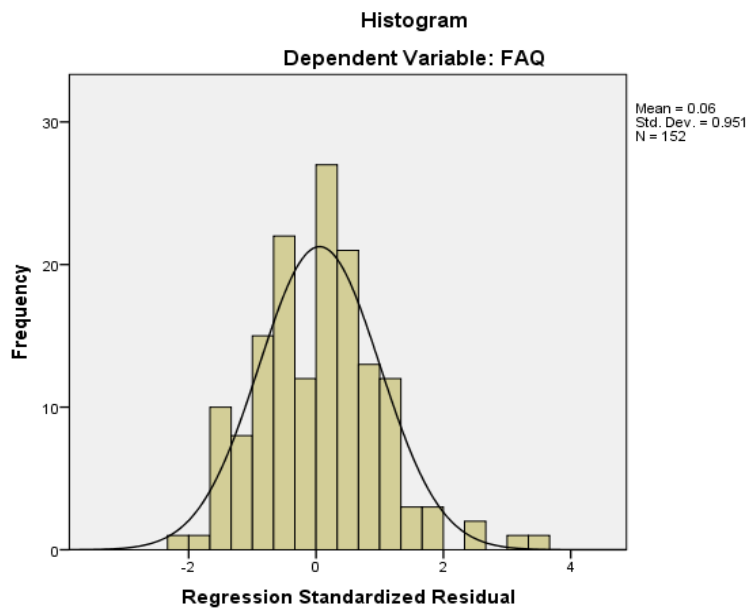


Figure 2. Histogram of FAQ scores.

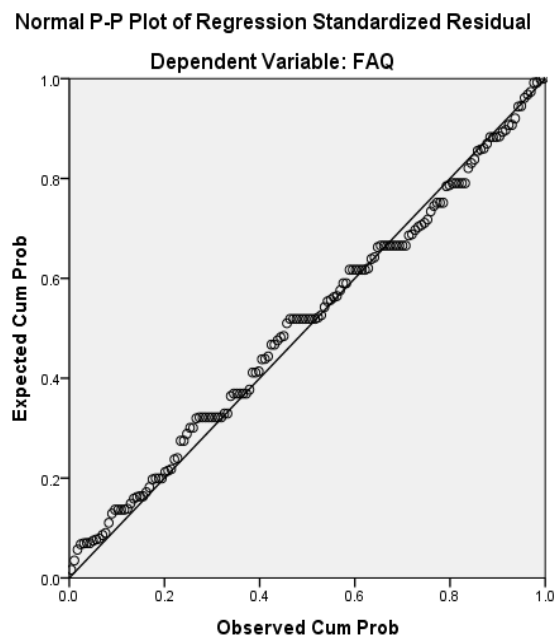


Figure 3. Plot of regression standardized residual of the FAQ.

Multiple regression analyses were run for each dependent variable twice: once with no cases excluded and once with the outliers removed. Removing the outliers had a small effect on the conclusions. No demographic factor or educational factors had a statistically significant effect on knowledge of aging. $F(7, 148) = 1.473, p = .181$. The model explained 6.5% of the variability in the knowledge of aging levels although the findings were not significant. Table 7 provides the statistical findings associated with multiple regression analysis for the model.

Table 7

Summary of the Analysis for Demographic and Educational Factors on Knowledge of Aging

Predictors	B	Beta	t	p
Male	.829	.124	1.518	.131
Older Student	.482	.092	1.099	.273
Racial Minority	.604	.604	1.000	.319
No Bachelors	.260	.045	.500	.618
Geron. Opportunities	-.734	-.091	-1.088	.278
Integrated Gerontology	.553	.853	.648	.518
Work with Geron.	.175	.035	.429	.668

Note. $F(7, 148) = 1.473, p = .181. R^2 = .065$. b Two respondents were removed from the analysis because they had a Mahalanobis Distance > 24.32

Research Question Two

Research question two asks, “What demographic factors and educational factors best predict nursing students’ attitudes toward older persons?” The hypotheses follow:

- H_0 : None of the demographic factors and educational factors have an effect on nursing students’ attitudes toward older persons.
- H_1 : At least one of the demographic and educational factors has an effect on nursing students’ attitudes toward older persons.

Multiple regression analysis was used to assess the ability of the independent variables to predict attitude toward older adults. The following independent variables were entered into the model: age, gender, race, type of program, gerontological opportunity, type of gerontology content, and desire to work with older adults. It is important to note that one individual was identified as an outlier (Mahalanobis Distance > 24.32). Preliminary analyses showed no violations of the assumptions of multiple regression testing. Assumptions included normality, linearity, and independence of residuals. This was checked by inspecting the Normal Probability Plot (Figure 3) and the Scatterplot (Figure 4).

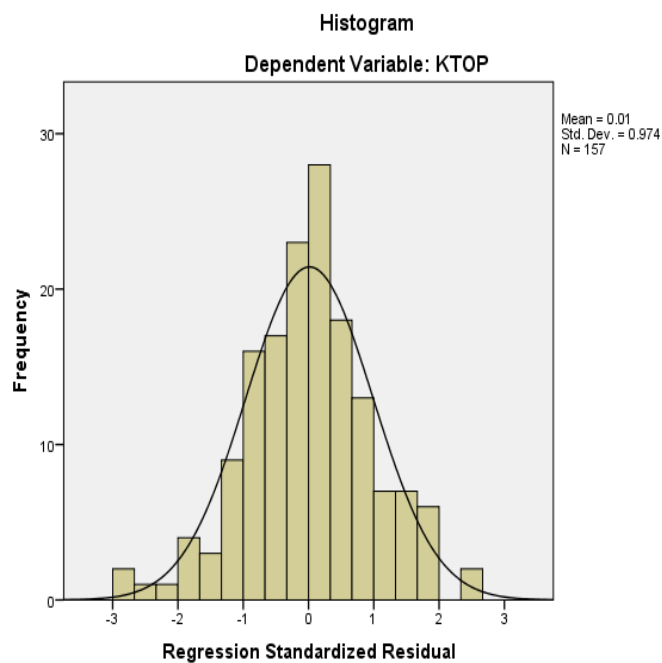


Figure 4. Histogram of KATOP scores.

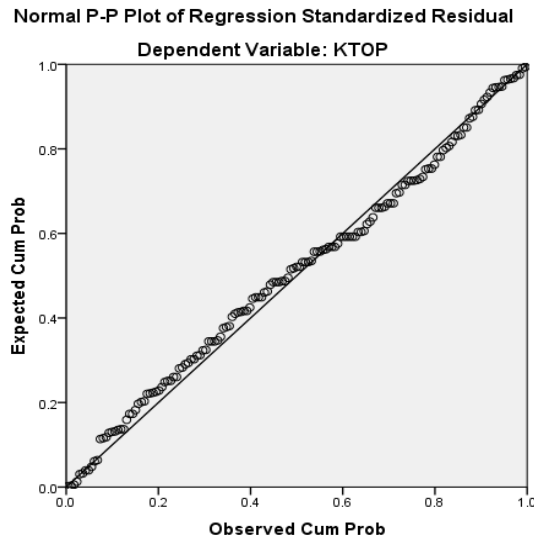


Figure 5. Plot of regression standardized residual of the KATOP.

Multiple regression analysis was run twice: once with no cases excluded and once with the outlier removed. Removing the outliers did not change the conclusions. The researcher used the model without the outliers. Demographic factors and educational factors have an effect on nursing students' attitudes toward older persons, $F(7, 150) = 4.979, p < .001$. The model explained 18.9% of the variability in the knowledge of aging levels.

Of specific interest are three significant predictors on attitudes toward older adults: racial minority, $t(150) = 3.269, p = .001$; not having a bachelor's degree, $t(150) = 2.199, p = .029$; and desire to work with gerontological patients, $t(150) = 2.552, p = .012$. Minority respondents score an average of 9 points higher on the KATOP when compared against non-minority respondents with the same sex, age group, degree, gerontological opportunity, type of gerontology content, and desire to work with older adults. Students with a diploma or an associate degree scored an average of more than 5 points higher on the KATOP when compared against bachelor degree respondents with

the same sex, age group, minority status, gerontological opportunities, type of gerontology content, and desire to work with older adults. Lastly, respondents that indicated a desire to work with older adults score an average of almost 5 points higher on the KATOP when compared against respondents not wishing to work with older adults who have the same sex, age group, minority status, degree, gerontological opportunities, and type of gerontology content. Table 8 provides the statistical findings associated with the multiple regression analysis for the model.

Table 8

Summary of the Analysis for Demographic and Educational Factors on Attitudes Toward Old People

Predictors	B	Beta	t	p
Male	.301	.009	.122	.903
Older Student	-1.067	-.042	-.539	.591
Racial Minority	9.038	.265	3.269	.001
No Bachelors	5.160	.181	2.199	.029
Geron. Opportunities	3.099	.079	-1.088	.315
Integrated Gerontology	.999	.019	.245	.807
Work with Geron.	4.681	.192	2.552	.012

Note. $F(7, 150) = 4.979$, $p < .001$, $R^2 = .189$

Research Question Three

Research question three asks, “What is the relationship between knowledge of aging and nursing students’ attitudes toward older persons, after controlling for all the other factors?” The hypotheses follow:

- H₀: Knowledge of aging has no effect on nursing students' attitudes toward older persons when controlling for demographic and educational factors.
- H₁: Knowledge of aging has an effect on nursing students' attitudes toward older persons when controlling for demographic and educational factors.

Hierarchical multiple regression analysis was used to assess the ability of the independent variable knowledge of aging to predict final semester nursing students' attitudes toward older adults, after controlling for the demographic and educational factors. The researcher used two hierarchical multiple regression models to answer this question. The following independent variables were entered into the first model: age, gender, race, type of program, gerontological opportunity, type of gerontology content, desire to work with older adults with knowledge of aging (FAQ1) added in Model 2. The researcher entered KATOP as the dependent variable in both models. Preliminary analyses showed no violation of the assumptions of multiple regression testing. Assumptions included normality, linearity, and independence of residuals. Inspection of the Normal Probability Plot (Figure 5) and the Scatterplot (Figure 6) revealed no serious violations of the conditions.

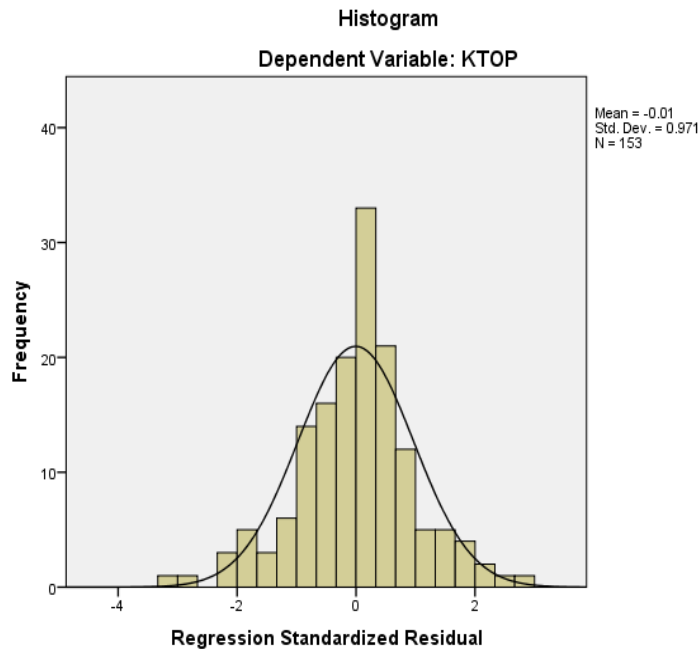


Figure 6. Histogram of KATOP scores with IV controlled.

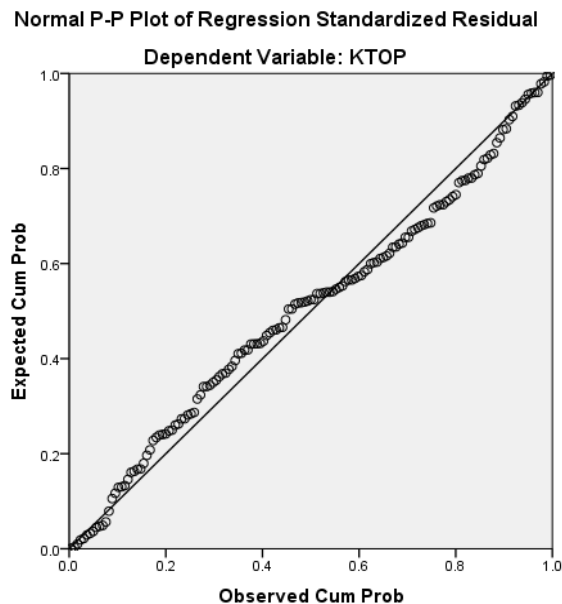


Figure 7. Plot of regression standardized residual of the KATOP with IV controlled.

In the first model, the predictors were gerontology opportunities, integrated gerontology, age groups, and desire to work with gerontological patients, racial minority, no bachelor's degree, and substantial gerontological opportunities. Model 1

accounted for 15% of the variance ($F(7, 149) = p < .002$). However, when the researcher added the KATOP to the model, this attitude scale accounted for an additional 5.9% of the variance in the attitude scores. This model as a whole was significant ($F(8, 148) = 3.285, p = .002$) when including the KATOP scale as a predictor of attitude.

In the second model, the constant predictors of gerontology opportunities, integrated gerontology, age groups, and desire to work with gerontological patients, racial minority, no bachelor's degree, substantial gerontological opportunities were entered at Step 1, explaining 15% of the model. After entry of the FAQ1 at Step 2, the total variance explained by the model as a whole was 21% ($F(9, 147) = 4.350, p < .001$). Knowledge of aging explained an additional 6 % of the variance of attitude toward older adults after controlling for the educational and demographic variables, R^2 change = .06, F change (1, 147) = 11.087, $p < .001$. In the final model, only racial minority was statistically significant ($\beta = .198, p = .017$).

Knowledge of aging significantly predicts attitude toward aging when controlling for educational and demographic factors. Knowledge of aging has an effect on nursing students' attitudes toward older persons when controlling for demographic and educational factors. In fact, for every additional correct answer on the FAQ, a student's attitude toward older people is expected to increase by 1.18 points. Table 9 provides the statistical findings associated with the hierarchical multiple regression analysis.

Table 9

Summary of the Analysis for the Ability of Knowledge of Aging on Attitudes Toward Older People After Controlling for Demographic and Educational Factors

Predictors	B	Beta	t	p
Model 1				
Male	1.425	.043	.547	.585
Racial Minority	7.268	.211	2.485	.014
No Bachelors	4.875	.168	1.966	.051
Geron. Opportunities	.232	.006	.030	.976
Integrated Gerontology	5.693	.111	.821	.413
Work with Geron.	3.965	.159	2.032	.044
Age groups	-1.592	-.061	-.762	.447
Model 2				
Male	.619	.019	.244	.807
Racial Minority	6.820	.198	2.407	.017
No Bachelors	4.667	.161	1.945	.054
Geron. Opportunities	-1.990	-.049	-.262	.794
Integrated Gerontology	2.613	.051	.386	.700
Work with Geron.	3.554	.143	1.879	.062
Age groups	-2.037	-.078	-1.005	.316
FAQ1	1.181	.252	3.330	.001

Note. Model 1 $F(8, 149) = 3.285, p = .002, R^2 = .151$; Model 2 $F(9, 147) = 4.350, p < .001, R^2 = .210$; Model Change: $F(1, 147) = 11.087, p = <.001, R^2 = .059$

Summary

This chapter presented the finding of the statistical analyses that were conducted for the study. Inferential and descriptive statistics were presented to describe the respondents. Regression analyses results were offered. Racial minority, not having a bachelor's degree, and desire to work with gerontology patients after graduation were statistically significant predictors of nursing students' attitudes toward older persons. Previous chapters have discussed the need for this research. Both the significant and insignificant findings from this study will contribute to the empirical data in these areas and provide information for nurse educators, nursing practice, and future research.

CHAPTER FIVE

DISCUSSION AND IMPLICATIONS

The following chapter discusses the research conclusions and evaluates the demographics, data analysis, and research question results. Additionally, the limitations, implications, and recommendations for the study will be provided for nurse educators, nursing practice, and further research.

Discussion

Demographic Factors

Various demographic variables were assessed in this study. The sample was described using the following demographic and educational variables: age, gender, race, ethnicity, state of residence, marital status, type of nursing program, substantial opportunity for gerontology, type of gerontological content, and desire to work with gerontology patients. Demographic items were reported by 206 participants, but due to incomplete surveys, 168 usable surveys resulted. The demographics of this sample were compared to the NLN Biennial Survey of Schools of Nursing for the academic year 2013-2014 and past research. The researcher determined that overall; the study's sample was mostly representative of the nursing population in all nursing program types, in the United. More detailed description and discussion follows.

Age. The subjects' ages ranged from 20-67 years with the majority of the sample (66.1%) below 25 years of age. The demographic findings are similar to the findings of the NLN Biennial Survey of Schools of Nursing for the academic year 2013-2014. Literature reviewed previously (Bernsten, 2010; Hweidi & Al-Obeisat, 2006; King et al., 2013; Liu et al., 2012; Shojaei & Masoumi, 2014; Wang et al., 2009) supports that the range of ages from this study are reflective of existing research in nursing students and

in the area of student attitude toward older adults: the majority of nursing students in nursing programs are below the age of 25 years in diploma, associate, and bachelor programs in the United States. There were no statistically significant findings in this study related to age.

Gender. The overall sample (n=168) was predominantly female (83.9%) with the remainder male (16.1%). The proportion of males (16.1%) in this study was fairly similar to the NLN (2014) survey which showed a proportion of males in all types of nursing programs in the United States to be about 15%. Thus, the majority of the sample matched the profile of the traditional nursing student in the United States, in all program types. Findings from this current study support gender demographics and conclusions drawn in previously mentioned studies in Chapter 2 (Bernsten, 2010; Hweidi & Al-Obeisat, 2006; Karlin, Emick, Mehls & Murry, 2006; King et al., 2013; Koren et al., 2008; Pan et al., 2009; Ryan & McCauley, 2004/2005). Of interest, males scored approximately 1 point higher on the FAQ1 and 0.5 point on the KATOP than female students. Findings were not significant, but may support the recruitment of more males into nursing due to the growing population of older adults.

Race. The current study had 85.1% of White/Caucasian and 14.9% of other races represented. Racial demographics in the present study differed only slightly in comparison to the NLN (2014) and AACN (2016) survey results. This could be related to a slightly less racially diverse population in the areas surrounding the students sampled.

According to NLN (2014) and AACN (2016), the RN population in the United States is comprised of 83% White/Caucasian; 6% African American; 6% Asian; 3%

Hispanic; 1% American Indian/Alaskan Native; 1% Native Hawaiian/Pacific Islander; and 1% other nurses. Earlier literature reviewed also supported that the majority (82.2-85.5%) of nursing students identify as White/Caucasian, while 14.5%-17.8% identify as various non-white races (African, Asian, Alaskan, Aborigine, Hispanic, etc.) in many nursing programs across the United States and globally (Eymard & Douglas, 2012; Higgins, Van Der Riet, Slater, & Peek, 2007; Holroyd et al., 2009). Thus, this study's sample is mostly reflective of nursing students' race in nursing programs across the nation as supported by the literature.

In this study, nursing students with racial minority scored 9 points more than Caucasian nursing students on the KATOP. Although not statistically significant, it is also of interest that racial minority students scored almost 1 point higher on the FAQI than Caucasian nursing students. These findings support the need for increased racial diversity in nursing with the increased older adult population. Additionally, more mentoring of these students should be encouraged in nursing programs and in practice.

Ethnicity/minority. In the current study, 6.5% of participants identified as Hispanic, 3.6% did not identify their ethnicity, and the majority (89.9%) identified as non-Hispanic. This demographic variable was removed from the model due to the large amount of non-Hispanic representation prior to multiple regression analysis. Since this data is so skewed toward non-Hispanic representation, the results would not be analyzable in multiple regression models and not generalizable to other populations although it may be of use to Pennsylvania nursing programs. The literature previously reviewed showed that the ethnic diversity in nursing students is lower when compared with the diversity of the overall population of the United States, but is slowly on the rise

(AACN, 2016). According to the NLN (2014) survey, more minorities were represented in basic RN programs (28%) than was evident in this study's sample (10.1%). This is a limitation of the study and a larger population of Hispanics could be targeted in future research in this area.

State of residence. There was representation from 28 of the 50 states from the 168 participants in this study. Pennsylvania was much more highly represented than any other state with 60.7% of the participants residing there. The other 39.3% of the participants resided in 27 other states. As previously mentioned, this demographic variable was removed from the model due to the large amount of Pennsylvania representation prior to multiple regression analysis. So, only frequencies and means were analyzed. No statistically significant findings were found. There were no real differences noted between Pennsylvania nursing students and the other groups. Since this data is so skewed toward Pennsylvania representation, the results would not generalize to other populations in the multiple regression model. Therefore, it is a limitation of this study. Future research should target a more national population.

Marital status. In the current study, most of the participants were single (77.4%), although some participants were married (21.4%), divorced, or separated (1.2%). Most research studies only reported descriptive statistics for marital status with the majority of students usually single. For example, Lee et al. (2015) reported 85% of the White students and 10.9% of the Asian students were single in a descriptive study with 308 nursing students in a baccalaureate nursing program in California. No studies researched marital status of nursing students with knowledge or attitude toward older adults. Buttner (2008) looked at marital status in relationship to nursing student attitude

and found that male students tended to be married more than female students in nursing programs. Interestingly, Buttner (2008) was also unable to analyze the data exploring nursing student attitude toward older adults using multiple regression.

In the present study, the variable of marital status was removed from the multiple regression model prior to doing the analyses because of the sensitivity to skewed data or small samples in any part of the variable being correlated. Multiple regression is not very forgiving if any of its assumptions are violated. Only frequency and means were analyzed for this demographic. This is a limitation of this study. A larger sample of married nursing students should be targeted in future research.

Desire to work with older adults. In the current study, when asked if they desired to work with older adults after graduation in any setting, the majority of respondents (41.3%) stated yes, (29.9%) stated no, and (28.7%) stated they were unsure. This is a dramatic improvement from past research. Upon further investigation, the researcher also found that on average, students who want to work with older adults after graduation scored about 4 points higher on the KATOP than students who do not want to work with older adults. This is higher than the results reported by most of the studies reviewed in Chapter 2 (Abbey et al., 2006; Aud et al., 2006; Brown et al., 2008; Gillis, MacDonald, & MacIsaac, 2008; Hayes et al., 2006; Henderson et al., 2008; King et al., 2013; Raudonis et al., 2012). The NLN and Hartford initiatives may have changed and improved nursing students' knowledge and attitude toward older adults.

The participants of this study may report a higher desire to work with older adults because of increased gerontological content, geriatric sensitivity training, more positive older adult clinical experiences, good gerontological role models, positive older

adult experiences in their personal life, or the realization that the largest component of patients in most medical areas after graduation will be older adults.

Most previous research exploring the desire to work with older adults by nurses and nursing students yielded more negative results. Only about 2 to 4 percent of newly graduated nurses report that they will specialize in geriatrics (Abbey et al., 2006; Aud, Bostick, Marek, & McDaniel, 2006; Gillis, MacDonald, & MacIsaac, 2008; Hayes et al., 2006; Henderson et al., 2008; King et al., 2013). Among reasons given were lack of preparation, inadequate clinical experiences focused on older adults, less pay in long-term care, and shortage of role models.

In the Henderson et al. (2008) study, first level nursing students had a more positive attitude of old persons overall, but they still reported that they do not wish to work with them. The reasons cited by these 262 students were poor experiences of providing older person care at clinical facilities, an inability to relate to or communicate with them, and a perception that the work itself is depressing and boring. In an anecdotal article, Raudonis, McLean, and Caubel (2012) discuss the need for students to connect with older adults in their clinical experiences in order to gain more knowledge of and form more positive opinions of older adults. Raudonis et al. (2012) reported that written comments by the students continually support the value of having a gerontological assignment, to increase the students' knowledge and improve the attitudes toward older adults.

Additionally, King et al. (2013) studied 80 undergraduate nursing students over a 2-year period and found that although students had an improving, mostly positive attitude toward older adults, working in nursing homes was consistently ranked last.

Interestingly, King et al. (2013) found that students consistently ranked emergency or intensive care work setting highest which often has a high census of older adults.

It is significant that in the current study, the majority of respondents (41.3%) stated yes and (28.7%) stated they were unsure about working with older adults after graduation. The many national initiatives by NLN and Hartford over the past decade, may have led to the more positive attitudes in about 70% of the final semester nursing students in this study. Therefore, further research in this area with more specific questions to students from all types of nursing programs about where they want to work after graduation, as well as what working with older adults in different settings entails, is needed to continue to cultivate improved knowledge and attitudes and promote a greater desire to work with older adults after graduation.

Educational Factors Discussion

Type of nursing program. In the current study, the majority of participants were from bachelor's programs (76.8%), followed by associate degree programs (19.6%), and lastly diploma programs (3.6%). It is important to note that NLN and Hartford both targeted this group of students in their initiatives. In this study, students without a bachelor's degree scored on average 5 points higher than students with a bachelor's degree on the KATOP showing more positive attitudes toward older adults which is dramatically improved from past studies. This is in opposition to most results found in the literature where the higher the degree, the more positive the nursing students' or staff nurses' attitude toward older adults. This could be related to the larger portion of baccalaureate students sampled residing in the state of Pennsylvania where many programs utilize long term care facilities to introduce beginning nursing students

to fundamental skills like personal care, feeding, dressing, and transferring residents. This may lead to the false belief that older adults require less skilled and exciting nursing care. Whereas, diploma and associate programs often start in hospital settings since these programs in Pennsylvania are frequently associated with regional hospitals.

Nursing research has been conducted to explore knowledge and attitude of nursing students at the diploma, associate, and baccalaureate degree levels in the United States and globally. Karlin et al. (2006), Koren et al. (2008), and Lambrinou et al. (2009) found a positive ($p < 0.05$) association between higher levels of education and positive attitudes toward older adults by participants. Lambrinou et al., (2009) assessed the effects of nursing students' education on attitudes and knowledge of aging in a technical education institute in Greece ($N=227$). More positive attitudes were found in the final year nursing students ($p = 0.62$). Interestingly, knowledge was only found to be better in final year students, in relation to student's physical health ($p = 0.022$). Koren et al. (2008) studied 200 prelicensure students in a baccalaureate nursing program to assess perceived learning needs and attitudes toward caring for older adults and also found a higher correlation of attitude toward older adults and educational degree.

A few other studies reported no statistically significant association between education level and attitudes toward older adults in their research studies (Holroyd et al., 2009; Pan et al., 2009). Koren et al. (2008) also found no association between education level and attitude towards older adults when they studied 200 student nurses in one university in the United States when using a cross sectional design and the AGED Inventory tool.

In addition, *The Future of Nursing: Focus on Education*, an IOM report published in October of 2010, stated that a BSN education introduces nursing students to a wider array of competencies in areas such as health policy, health care finances, community and public health, gerontology, quality improvement, systems thinking, and leadership than other educational levels. The report further notes that an increase in the percentage of nurses with a BSN to 80% by the year 2020 would create a workforce better equipped to meet the demands of older adults. The findings of this study suggest a possible need for further examination into what might be done differently in associate or degree programs in the care of older adults that could be incorporated into baccalaureate nursing programs to improve attitudes toward older adults. For example, baccalaureate clinical faculty may want to try to promote more positive, hands on opportunities with well older adults for students in fundamental clinical rotations.

Type of gerontological content. The majority of students in this study reported that their gerontological content was integrated throughout their programs (62.9%), others reported a stand-alone gerontological course (6%), while the remainder of participants reported the content was provided both ways (29.2%). Findings support current curricula found in nursing programs of all types in the United States.

In the review of the literature, almost half of the undergraduate nursing programs, nationally and globally, appear to have gerontological content integrated into one or more courses (Grocki & Fox, 2004; Hancock et al., 2006; Ironside et al., 2010; Plonczynski et al., 2007; Regenstreif, Brittis, Fagin & Rieder, 2003). In addition, nursing curricula in some programs occasionally have both a stand-alone gerontology course and older adult content, woven throughout some or all of the nursing clinical and

didactic courses (Deschodt, deCasterle, & Milisen, 2010). Similarly, Berman et al. (2005) and Gilje et al. (2007) investigated how gerontological nursing content in associate and bachelor nursing programs was provided in nursing programs. Both found that although it varied in many programs, the biggest shift since the geriatric initiatives began in 2003, is increased integration of gerontological content in a greater number of courses in baccalaureate curriculum.

Although not statistically significant, the findings of this study offer strong evidence that integration of gerontological content and/or both integrated and standalone gerontology content may assist in improving nursing student attitude toward older adults. Further investigation into the number of courses that have integrated gerontology content, which courses have the most content integrated, and how many of these courses may be taught by faculty with more positive attitudes toward older adults is needed. Ninety-four percent of the respondents of the current study reported both stand alone and integrated or integrated gerontology content in their nursing programs. Since the majority of respondents also have more positive attitudes and a desire to work with older adults, further research using more specific questions about how students receive their gerontology content is needed.

Substantial gerontological opportunities. In the current study, most of the participants felt that they had adequate gerontology care opportunities (89.8%), while 10.2% of students felt that they did not have substantial gerontological care opportunities in their nursing program. Findings support that the gerontological initiatives may have provided more gerontological opportunities for nursing students. The nursing students in the current study that felt that they had substantial

gerontological opportunities scored approximately 3 points higher on the KATOP than those that did not feel that they had substantial gerontological opportunities which reflects existing literature of students with a more positive attitude toward older adults.

In the literature review, few studies in nursing distinguish the frequency of contact from the quality of contact in examining student nurses' attitudes toward older persons. Some research studies have reported that quality contact with well elderly in positive conditions has a lasting effect on nursing students' attitudes toward older adults (Ironside et al., 2010; O'Hanlon & Brookover, 2002). Although other research studies have more often assessed whether a specific clinical project affected student attitude of older adults (Abbey et al., 2006; Franklin et al., 2011; Henderson et al., 2008). This ambiguity in the literature of the true impact of substantial or unsubstantial clinical experiences with the older adult care on students' attitudes needs further investigation. Although this factor's findings in this study were not statistically significant, students who felt that they had substantial gerontological opportunities scored higher on the KATOP showing a more positive attitude toward older adults that should be further investigated.

Research Question Results

Question one failed to yield any statistically significant results, while questions two and three did find statistically significant relationships between the variables. This segment of the chapter discusses research question findings and explains the potential reasons for insignificance. Interesting findings from this descriptive study will also be considered.

Research Question One. The first research question examined the relationship between demographic factors, educational factors, and knowledge of aging. The researcher attempted to evaluate which educational and demographic factors influenced knowledge of aging. No statistically significant relationship was found in the current study. Prior research has reported some significant relationships between demographics and knowledge of aging using the FAQ, but mostly after a specific gerontological content or activity was conducted (Ferrario et al., 2008; Flood & Clark, 2009; Lee, 2015).

Flood & Clark (2009) explored knowledge of aging and found that the FAQ1 measured increased knowledge of aging after gerontological content was provided to the study participants. Interestingly they also reported improved attitude towards older adults. Likewise, Ferrario et al. (2008) found that the FAQ1 measured improved knowledge in the nursing students after a gerontological curriculum change. Similarly, Lee (2015) administered the FAQ1 in a community health setting pre and post older adult clinical experiences and found that the nursing students had significantly improved knowledge of aging scores after the community nursing clinical experience.

Conversely, Ryan & McCauley (2004/2005) found that 55 BSN students lacked knowledge about care of the elderly in a New York University using the FAQ1 after a curriculum change.

A few options exist to explain the insignificant relationship found between the variables in question 1. The sample was described using the following demographic and educational variables: age, gender, race, ethnicity, state of residence, marital status, type of nursing program, substantial opportunity for gerontology, type of gerontological

content, and desire to work with gerontology patients. There may have been other influences such as media, personal gerontological experiences, sociocultural factors, and/or fear of personal aging that may have attributed to the results. Students may also have other educational factors that affected their knowledge of older adults that were not included such as faculty without gerontological expertise or no older adult nursing simulations, and/or textbooks without a gerontological focus. Additionally, students may have misunderstood a few of the questions asking about substantial opportunity for gerontology, desire to work with gerontology, or how gerontological content was provided in their nursing program in the survey. For example, a few students selected to use the “Other” response just to explain that gerontological content was provided as a stand-alone course and integrated throughout their program even though there was a “Both” response. The “Both” response would have been the better option and yet two students chose “Other” to state that they had gerontology content in both an integrated and stand-alone manner in their nursing programs.

Of additional interest is that students in this study did not score high on the FAQ1 (M 12.39, SD 2.62). A score of zero would indicate no knowledge of aging and a score of 25 would point toward high knowledge of aging. Whereas, the current study participants scored on average about a 50% on the FAQ1, indicating only moderate knowledge of older adults using this tool. It is possible that the reliability of the FAQ tool was affected to some extent by the previously noted homogeneity of the study sample in some demographic areas. Possibly, students in these areas do not receive enough gerontological content in their nursing programs even though there has been over a decade of gerontology initiatives in the United States. There remains a gap in the

literature in the area of what demographic or educational factor can predict increased knowledge of older adults in nursing students, but this study shows some interesting findings that should be further investigated in a larger, more diverse population of senior nursing students. It would also be interesting to compare the differences in knowledge of aging between all levels of nursing students using the FAQ1.

Research Question Two. The second research question examined the relationships between the remaining four demographic factors and three educational factors to find the best predictors of nursing students' attitudes toward older persons. Predictor relationships of specific interest in this study were the demographic factors of racial minority ($p = .001$), desire to work with gerontological patients ($p = .012$), and the educational factor of not having a bachelor's degree ($p = .029$). All three factors were statistically significant and scored 5 or higher points on the KATOP than all other participants in the study. These findings support that certain demographic or educational factors affect student attitudes toward older adults.

Racial minority. In this study, racial minority is significant at $p = .001$ and these students scored 9 points higher than Caucasian students on the KATOP. As previously mentioned, the ethnic diversity in nursing students is lower when compared with the diversity of the overall population of the United States, but is slowly on the rise (AACN, 2016). Lack of racial minority in nursing programs is an ongoing issue commonly reported in all types of nursing research. Limited nursing research has been done exploring race and attitudes toward older adults and results are often insignificant (Flood & Clark, 2009; Holroyd et al., 2009; Lee, 2015). For example, Lee (2015) used a cross sectional sample of 308 students in one university. The multiple regression analysis

showed that race/ethnicity were the strongest variable to explain negative attitude toward older persons. The White and Asian students showed no significant differences in positive attitudes. Although the White group had significantly less negative attitudes ($M = 40.7$ versus $F = 30.2$, $p < 0.05$) than the Asian group. The multiple regression analysis did show that race/ethnicity was the strongest variable to explain negative attitudes for aged adults in these 308 students (Lee, 2015).

That race has a positive effect on nursing students' attitude toward older adults in this study is significant. The findings support that nursing programs may want to consider more focused recruitment to try to increase racial diversity in their nursing programs. Increasing racial diversity in nursing programs may help improve attitudes toward aging, as well as an increased interest in gerontological nursing specialization. This in turn, may increase the culturally diverse nursing care that needs provided to the growing population of ethnically diverse, older adults (Ironside et al., 2010). For example, African American and Asian nursing student showed more positive attitudes and higher respect for older adults in the Lee (2015) study. Some races hold older adults in higher esteem in their culture; feeling that older adults are wiser with age, appreciating the sharing of life stories, as well as occasionally being raised by grandparents. In addition, increasing racial diversity in faculty and students could also promote more gerontological nursing interest and better mentoring in this area of nursing.

Type of nursing program: Not having a bachelor's degree. In this study, the educational factor of not having a bachelor's degree ($p = .029$) being significant for more positive attitudes of nursing students is interesting. Participants of this study that

were in diploma and associate nursing programs had more positive attitudes than students in bachelor programs and scored on average 5 points higher on the KATOP than students in bachelor degree programs. This finding is contradictory to most of the previous literature.

Traditionally, diploma and associate programs tend to have a higher percentage of older students than bachelor programs which may lead to more tolerance and life experience with older adults. In the current study, the mean ages by type of program were similar to the findings in the literatures: diploma (40.8 yrs.), associate (27.3 yrs.), and bachelor (24.5 yrs.). Additionally, diploma and associate programs are normally completed in two years or less, so these students tend to have a larger percentage of hands on clinical experience time with older adults. These students may remember first clinical experiences with older adults more fondly than bachelor degree students. Furthermore, diploma and associate degree programs tend to focus more on technical skills, whereas bachelor programs tend to focus more on research and management skills. Bachelor degree programs also tend to encourage students to think more about advanced degrees. This focus on research, management, and advanced degrees may lead bachelor degree students to consider gerontological nursing as fundamental, less skilled, and unexciting nursing. Whereas, the opposite is true. Gerontological nursing requires coordinated care of multiple coexisting conditions. These coexisting conditions which can occur during hospitalizations or transitions of older adults may include polypharmacy issues, geriatric syndromes, and complications which require knowledgeable, situational decision making and individualized problem solving by nurses educated in gerontological matters (Tagliareni et al., 2012).

IOM's *The Future of Nursing: Focus on Education* report which stated that a BSN education introduces nursing students to a wider array of competencies in areas such as health policy, health care finances, community and public health, gerontology, quality improvement, systems thinking, and leadership than other educational levels supports this need. The report further notes that an increase in the percentage of nurses with a BSN to 80% will occur by the year 2020. This provides a unique opportunity to create a workforce better equipped to meet the demands of older adults, as well as individuals poised to achieve master's and doctoral degrees required to serve as primary care providers, nurse researchers, and nurse faculty.

As previously discussed in the literature review, Holroyd et al. (2009), Koren et al. (2008), and Pan et al. (2009) reported no significant association between education level and attitudes toward older adults in their research studies. Whereas, Karlin et al. (2006) and Lambrinou et al. (2009) found a positive ($p < .05$) association between higher levels of education and positive attitudes toward older adults by participants. In a technical education institute, Lambrinou et al., (2009) evaluated the effects of nursing students' education on attitudes and knowledge of aging ($N=227$) and found more positive attitudes in the final year nursing students ($p = 0.62$). Further exploration of the how gerontological content is provided in all types of nursing programs is needed.

Desire to work with gerontology patients. In the current study, 41% of the participants desired to work with gerontology patients, 30% did not desire to work with gerontology patients, and 29% were unsure if they desired to work with gerontology patients. These findings are so much better than in past literature. The results also showed that participants that desire to work with gerontological patients ($p = .012$)

scored 4.68 points higher on the KATOP than participants that were unsure or did not desire to work with gerontology patients. The NLN and Hartford national initiatives seem to have improved attitude toward older adults greatly. It seems reasonable that students who desire to work with gerontology patients would have a fondness or better attitude toward older adults than students who are unsure or would rather not care for older adults. It is possible that life experiences such as illness, death, work, or older adult role models could also have a direct impact on participants desire to work with gerontology patients.

Another consideration of the study results is that participants may have misunderstood the desire to care for gerontological patients question in the present survey. Nursing students often think of gerontological nursing as care that is being provided only in long term care facilities which is a common misconception. Statistics reported by The John A. Hartford Foundation Institute for Geriatric Nursing (2008) support that most students will be required to care for this older person population in a multitude of healthcare settings including home health, outpatient centers, emergency rooms (ER), operating rooms (OR), medical-surgical units, critical care units (CCU), and intensive care units (ICU). More recent statistics by the Hartford Institute for Geriatric Nursing (2012) show that older adults make up approximately 50% of all hospital stays; 60% of medical-surgical units, 46% of coronary care units (CCU), 50% intensive care units (ICU), and 26% of emergency room (ER) admissions. These statistics in the literature support that almost all nursing students will eventually care for older adults therefore increased desire to work with gerontology patients is crucial.

Research Question Three. Research question three explored the relationship between knowledge of aging and nursing students' attitudes toward older persons, after controlling for all the other demographic and educational factors. The researcher used two hierarchical multiple regression models to assess the ability of knowledge of aging to predict attitude toward older adults. Although both models demonstrated the ability of predicting attitudes toward aging, Model 2 was used to answer the research question ($F(8, 148) p = .002$). The total variance explained by the model as a whole was 21% ($F(9, 147) = 4.350, p < .001$). Knowledge of aging explained an additional 6 % of the variance of attitude toward older adults after controlling for the educational and demographic variables, R^2 change = .06, F change (1, 147) = 11.087, $p < .001$. In the final model, only racial minority was statistically significant ($\beta = .198, p = .017$).

Knowledge of aging significantly predicts attitude toward aging when controlling for educational and demographic factors. Knowledge of aging has an effect on nursing students' attitudes toward older persons when controlling for demographic and educational factors. In fact, for every additional correct answer on the FAQ, a student's attitude toward older people is expected to increase by 1.18 points. Thus, the findings support the TPB model that knowledge of aging affects attitude toward older adults and directly impacts the behavioral intention to work with older adults. It is important to note that in this study knowledge of aging seemed to affect attitude, yet it is possible the positive attitude could in fact affect knowledge. Further research is needed to investigate this phenomenon further.

As mentioned earlier, there will be an increased need for nurses to work with older adults. The Bureau of Labor and Statistics (2014) confirmed that older adults

will need the most services from healthcare providers and have five or more chronic health issues requiring multifaceted, competent gerontological care (National Council on Aging, 2014). In addition, the Administration on Aging (2013) reported that older adults utilize the bulk of home services; comprise approximately 69% of home care recipients; direct care by RNs in the community is given to over 45%. Approximately 90% of the residents in nursing homes are aged adults and require assistance with activities of daily living and have significant cognitive impairments (Administration on Aging, 2013). Good outcomes, including longevity and quality of life for older persons, may depend upon increased gerontological competence and positive student attitudes (Baldacchino & Galea, 2012a; Baldacchino & Galea, 2012b; Buttner, 2008; Celik et al., 2010; Liu, Norman & While, 2012). Using the TPB model previously discussed, attitude toward aging proved to have a direct effect on desire to work with older adults while knowledge of aging and certain educational and demographic factors (race, type of nursing program, and desire to work with gerontology patients) played an indirect role by influencing attitude. Since the older adult population continues to grow and have increased complex health needs, it is becoming an obvious necessity for nursing programs to be able to provide highly competent geriatric nurses with positive attitudes and a desire to work with older adults in a variety of health care settings.

Findings Linked to the Theory of Planned Behavior

The Theory of Planned Behavior (TPB) guided this study and is based upon two major assumptions: 1) that human beings are rational and make systematic use of information available to them; 2) people consider the implications of their actions

before they decide whether to engage in certain behaviors. TPB further suggests that behavior is governed by intent, which is a combination of one's attitude as to whether performing the behavior will result in a positive or negative outcome, and one's motivation to meet the perceived expectation(s) of others (Ajzen & Fishbein, 2005).

As a general rule, the theory supports that the stronger the intention to engage in a behavior, the more likely the behavior will occur. One study in nursing that used the TPB examined attitudes held by 172 student nurses in three institutions in the United Kingdom by using vignettes that described different nursing behavioral orientations toward older patients (McKinlay & Cowan, 2006). McKinlay and Cowan (2006) found that although participants' attitudes are the main determinant of behavioral intentions towards older adults, their subjective norms also played a significant role. Student nurses' attitudes were related to four underlying factors: intolerance, humanism, concern about aging, and social inclusion. Students with a more positive attitude towards older patients showed less intolerance and concern over aging and more humanism. Students also felt that they had a moderately high level of control over those behaviors. In this study, students with increased knowledge showed more positive attitudes toward older adults and a stronger intention to work with older adults after graduation.

Limitations

Several limitations can be identified in this study. This study used a convenience sample of final semester nursing students in the United States which was mostly from the state of Pennsylvania. Due to changes in the requirements, one of the largest, planned forms of student contact had to be discarded. This severely limited the amount of students reached across the United States, outside of the state of Pennsylvania, as well

as the amount of students with ethnic diversity. The large portion of students from Pennsylvania may have skewed the findings of this study in several areas. Future studies should include multiple sites, from across the nation, for better generalizability.

Another limitation was the student inclusion criteria included in this study. This study included only final semester nursing students. Final semester nursing students were chosen because they would have an increased opportunity to have had more exposure to older adults and longer time to form attitudes since they have been in the program the longest. Because gerontological exposure exists at all levels of the program, additional research including greater representation from all levels of nursing students should be considered for future studies.

An additional limitation is the age of the tool used for measuring knowledge of aging, the FAQ1. It measures general knowledge of older adults, but does not measure medical knowledge of older adults. Although the tool is older, the researcher, along with the creator of the tool, verified that the statistical information continued to be valid, but creation of a tool to measure medical knowledge would be useful for future research in this area of study.

Lastly, the use of a self-reporting survey was a limitation. The advantages of using the survey research were that it was anonymous, economical, highly flexible, and well suited to studying attitudes, knowledge, and trends in various population sizes (Bakla, Cekic, & Koksall, 2013; Polit & Beck, 2017). The disadvantages of using self-report survey is that participants could have been less than honest to try and appear to be less ageist.

Implications

Implications from this study exist for gerontological nursing practice, nursing education, and future research. According to the literature, negative stereotyping of older adults exists. Therefore, identification of factors that may intensify positive attitudes toward older adults should be considered in these three areas.

Nursing Practice

Nursing practice is already starting to see an influx of gerontological patients in a variety of health care settings. The results of this research project provide additional support of the need for the promotion of gerontological knowledge and skills. It is crucial that geriatric nursing interests be cultivated upon graduation from nursing programs, to influence job choices by new nurses. Experiential geriatric sensitivity training could begin in hospitals to aid nurses in understanding the issues that older adults endure on a daily basis. This could decrease ageism among nurses and promote better outcomes for older adult patients. Health care facilities could start multiple gerontological education programs and require certain levels of competency annually. This increased knowledge of aging has been shown in previous literature, as well as the current study to increase positive attitudes toward older adults. Health care facilities could encourage gerontological certification by having pay incentives when nurses earn an advanced degree or certification in gerontology. Nurse residency programs could provide gerontological nurse role models who promote leadership in gerontological initiatives at local, state, and national levels.

Consideration should also be given to increasing the hiring of nurses, especially those of racial minority who are willing and able to care for the growing, ethnically

diverse older adult population. By increasing the diversity of the health care workforce, ethnically diverse older adults may have better outcomes. In addition, nursing students attending clinical in these facilities will have the opportunity to see nurses with more positive attitudes toward older adults. These students will experience rich and substantial gerontological clinical experiences which may increase their desire to work with older adults.

Nursing Education

Although the current study found increased knowledge and more positive attitudes toward older adults, more education is still needed. First, nurse educators need to examine existing curriculum, in order to see the status of gerontology content in their program. The results of the current study add support for the need of more integrated gerontology content and increased knowledge in areas of geriatric statistics. This could be done by developing a curriculum with multiple courses containing varied gerontological content. Nursing education, beginning at the entry level, should consider exposure to more gerontological content and exposure to substantial, gerontological clinical opportunities in a variety of settings (Green and Dorr, 2016). The opportunities should include substantial time with well and unhealthy older adults, to increase knowledge of aging and geriatric syndromes including delirium, falls, incontinence, pressure ulcers, sleep disturbances, oral hydration, fluid overload, infection, poly-pharmacy, depression, dementia, and multiple chronic diseases with acute exacerbations. Ironside et al. (2010) reported that quality contact with well elderly in positive conditions has a lasting effect on nursing students' attitudes toward older adults.

Early identification of negative attitudes toward older adults would allow faculty opportunities to engage students in activities that would promote a less ageist outlook. One option is to have a different structuring of clinical content to include active, positive-learning of gerontology with some well older adults which may increase both knowledge and attitude toward older adults very early in the nursing program. Some ways to do this may be to use gerontological simulations, experiential sensitivity training, case studies, or role playing. Another way to do this is to utilize experiential sensitivity training so that students understand what older adults deal with on a daily basis. This may improve student experiences and the quality of care that older adults receive.

Additionally, nurse educators may need continuing education in gerontological nursing. Geriatric sensitivity training, use of NLN ACES cases, GNEC toolkits, as well as other continuing education should be encouraged in all types of nursing programs. The more educated the faculty, the more educated the students will become. A mentored experience with faculty or other students that have an interest in gerontology nursing could also be initiated. Mentoring may also increase the interest in gerontological certification and advanced practice in gerontology.

Nurse educators need to develop appropriate pedagogy to provide nursing students with the best knowledge, skills, and attitudes to provide for this growing population's diverse healthcare needs. This can be done by providing innovative, curriculum changes in gerontology that are evidence based and promote knowledge of aging using simulation, case studies, or technology. One way may be to utilize ACES cases and other NLN Excellence in Nursing Education Model tools to better educate and

prepare student nurses to advance the health of the multiethnic, multiracial older adult population of the nation.

In addition, nurse educators could form partnerships with multiple older adult service providers in the area so that students see older adults in a variety of settings beside long term care facilities. This would further improve attitudes toward older adults. Nurse educators should also provide didactic and clinical opportunities for learning about all types of gerontological care by effectively integrating technology to promote gerontological expertise and promote an interest in gerontological nursing. Improving attitudes and knowledge of older adults could improve students' willingness to engage in gerontological nursing and research. Nurse educators would then gain satisfaction in knowing that students are ready to meet the societal needs of older clients, in a variety of settings

Nursing Research

This study seeks to build upon previous research to provide valuable conceptual insight, as well as empirical information that may assist with designing nursing education curriculum and pedagogy that may effectively recruit more knowledgeable student nurses into gerontological nursing, therefore providing nurses competent to care for the growing older adult population. One way to do this is to encourage more gerontological research. Specifically, more research in attitude toward aging and/or knowledge of aging research. Future research could investigate knowledge of aging and attitudes toward older adults at all levels of nursing programs instead of just the final semester of the nursing program.

Future studies measuring knowledge and attitude towards older adults should be global or national. An updated tool should be created to measure medical knowledge of older adults including geriatric syndromes and daily issues of older adults. Qualitative as well as quantitative components could be added to more fully explore what students mean by substantial clinical experience, desire to work with older adults, and attitudes toward older adults.

Recommendations

The study provided empirical evidence that knowledge of aging may influence attitude toward older adults. Large numbers of health care workers will be retiring and/or reducing their working hours while the demand for geriatric health care is increasing (Bureau of Labor and Statistics, 2014). The greater demand for healthcare may affect the nature of the skills and services required, as well as the settings in which this care is provided to older adults. Additionally, nursing students need to be made aware of the varied opportunities of working with older persons in hospital departments, nursing homes, rehabilitation facilities, senior centers, as well as in retirement communities and patients' homes. To ensure that older adults live a healthy life of good quality, nursing programs must develop ingenious ways to infuse gerontological content into their nursing programs to prepare a workforce that is knowledgeable and skilled in geriatric nursing.

For older persons to receive better nursing care, graduating nurses must be competent to meet societal needs. Therefore, additional gerontological education and research, including mixed methods studies are needed to continue to explore how racial minority, program type, and desire to work with older adults are most influential in

predicting nursing students' attitude toward older persons to assist in increasing the number of competent graduating nursing students who intend to work with older adults as a career choice. A better tool should be created to measure knowledge of aging in the healthcare fields including nursing.

Conclusions

Final semester nursing students in this study showed improved knowledge and more positive attitudes toward older adults than in previous literature. This is great news. Nurse educators and researchers need to continue to promote improvements in both of these areas due to the growing older adult population with complex health care needs. The Theory of Planned Behavior provided a conceptual framework and behavioral model to guide this research study: nursing students may be more willing to take care of older persons if, they are provided more gerontological knowledge and after weighing personal feelings or attitudes, they believe that working with or taking care of the older person will lead to more positive outcomes for older adults in healthcare. This study further provided data supporting that some demographic and educational factors do seem to predict positive attitudes toward older adults. Additional research is needed in these areas to further explore this phenomena.

In conclusion, as a result of this study, there are a number of areas for future study. Nurse educators should explore innovative ways to change curriculum to provide more gerontological content in clinical, simulations, and/or didactic courses which may provide older adults with more competent healthcare and better outcomes. Nursing practice may explore ways to increase racial diversity and interest in

gerontological nursing. Nurse researchers could utilize the findings from this study and further explore the attitudes and behaviors toward older adults in future research.

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Appendix A

Kogan's Attitude Toward Old People Scale

For each of the following statements, choose the response that is closest to your opinion of old people.

1. It would probably be better if most old people lived in residential units with people their own age.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

2. It would probably be better if most people lived in residential units with younger people.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

3. There is something different about most old people; it's hard to find out what makes them tick.

- ☐ Strongly Disagree
- ☐ Slightly Disagree
- ☐ Neither Agree nor Disagree
- ☐ Slightly Agree
- ☐ Strongly Agree

4. Most old people are really no different from anybody else; they're as easy to understand as younger people.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

5. Most old people get set in their ways and are unable to change.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

6. Most old people are capable of new adjustments when the situation demands it.
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Neither Agree nor Disagree
 - ☐ Agree
 - ☐ Strongly Agree
7. Most old people would prefer to quit work as soon as pensions or their children can support them.
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Neither Agree nor Disagree
 - ☐ Agree
 - ☐ Strongly Agree
8. Most old people would prefer to continue working just as long as they possibly can rather than be dependent on anybody.
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Neither Agree nor Disagree
 - ☐ Agree
 - ☐ Strongly Agree
9. Most old people tend to let their homes become shabby and unattractive.
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Neither Agree nor Disagree
 - ☐ Agree
 - ☐ Strongly Agree
10. Most old people can generally be counted on to maintain a clean, attractive home.
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Neither Agree nor Disagree
 - ☐ Agree
 - ☐ Strongly Agree
11. It is foolish to claim that wisdom comes with age.
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Neither Agree nor Disagree
 - ☐ Agree
 - ☐ Strongly Agree

12. People grow wiser with the coming of old age.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

13. Old people have too much power in business and politics.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

14. Old people should have power in business and politics.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

15. Most old people make me feel ill at ease.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

16. Most old people are very relaxing to be with.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

17. Most old people bore others by their insistence on talking "about the good old days".

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

18. One of the most interesting and entertaining qualities of most old people is their accounts of their past experiences.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

19. Most old people spend too much time prying into the affairs of others and giving unsought advice.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

20. Most old people tend to keep to themselves and give advice only when asked.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

21. If old people expect to be liked, their first step should be to try to get rid of their irritating faults.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

22. When you think about it, old people have the same faults as anybody else.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

23. In order to maintain a nice residential neighborhood, it would be best if too many old people did not live in it.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

24. You can count on finding a nice residential neighborhood when there is a sizeable number of old people living in it.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

25. There are a few exceptions, but in general most old people are pretty much alike.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

26. It is evident that most old people are very different from one another.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

27. Most old people should be more concerned with their personal appearance; they're too untidy.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

28. Most old people seem quite clean and neat in their personal appearance.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

29. Most old people are irritable, grouchy, and unpleasant.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neither Agree nor Disagree
- ☐ Agree
- ☐ Strongly Agree

30. Most old people are cheerful, agreeable, and good humored.
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Neither Agree nor Disagree
 - ☐ Agree
 - ☐ Strongly Agree
31. Most old people are constantly complaining about the behavior of the younger generation.
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Neither Agree nor Disagree
 - ☐ Agree
 - ☐ Strongly Agree
32. One seldom hears old people complaining about the behavior of the younger generation.
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Neither Agree nor Disagree
 - ☐ Agree
 - ☐ Strongly Agree
33. Most old people make more excessive demands for love and reassurance than anyone else.
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Neither Agree nor Disagree
 - ☐ Agree
 - ☐ Strongly Agree
34. Most old people need no more love and reassurance than anyone else.
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Neither Agree nor Disagree
 - ☐ Agree
 - ☐ Strongly Agree

Appendix B

Palmore's Facts on Aging Quiz 1 Multiple Choice Version

For each of the following statements, choose the response that makes the statement true.

1. The portion of people over 65 who are senile (have impaired memory, disorientation, or dementia) is:
 - a. about 1 in 100
 - b. about 1 in 10
 - c. about 1 in 2
 - d. the majority
2. The senses that tend to weaken in old age are:
 - a. sight and hearing
 - b. taste and smell
 - c. sight, hearing, and touch
 - d. all five senses
3. The majority of old couples
 - a. have little or no interest in sex
 - b. are not able to have sexual relations
 - c. continue to enjoy sexual relations
 - d. think sex is only for the young
4. Lung vital capacity in old age:
 - a. tends to decline
 - b. stays about the same among non-smokers
 - c. tends to increase among healthy old people
 - d. is unrelated to age
5. Happiness among old people is:
 - a. rare
 - b. less common than among younger people
 - c. about as common as among younger people
 - d. more common than among younger people
6. Physical strength:
 - a. tends to decline with age
 - b. tends to remain the same among healthy old people
 - c. tends to increase among healthy old people
 - d. is unrelated to age

7. The percentage of people over 65 in long-stay institution (such as nursing homes, assisted living facilities, mental hospitals, and homes for the aged) is about:
 - a. 5%
 - b. 10%
 - c. 25%
 - d. 50%
8. The accident rate per driver over age 65 is:
 - a. higher than for those under 65
 - b. about the same as for those under 65
 - c. lower than for those under 65
 - d. unknown
9. Most workers over 65:
 - a. work less effectively than younger workers
 - b. work as effectively than younger workers
 - c. work more effectively than younger workers
 - d. are preferred by most employers
10. The proportion of people over 65 who are able to do their normal activities is about:
 - a. one tenth
 - b. one quarter
 - c. one half
 - d. three fourths
11. Adaptability to change among people over 65 is:
 - a. rare
 - b. present among about half
 - c. present among most
 - d. more common than among younger people
12. As for old people learning new things:
 - a. most are unable to learn at any speed
 - b. most are able to learn, but at a slower speed
 - c. most are able to learn as fast as younger people
 - d. learning speed is unrelated to age
13. Depression is more frequent among:
 - a. people over 65
 - b. adults under 65
 - c. young people
 - d. children

14. Old people tend to react:
- a. slower than younger people
 - b. at about the same speed as younger people
 - c. faster than younger people
 - d. slower or faster than younger people, depending on the type of test
15. Old people tend to be:
- a. more alike than younger people
 - b. the same as younger people in terms of likeness
 - c. less alike than younger people
 - d. more alike in some respects and less alike in others
16. Most old people say:
- a. they are seldom bored
 - b. they are sometimes bored
 - c. they are often bored
 - d. life is monotonous
17. The proportion of old people who are socially isolated is:
- a. almost all
 - b. about half
 - c. less than a fourth
 - d. almost none
18. The accident rate among workers over 65 tends to be:
- a. higher than among younger workers
 - b. about the same as among younger workers
 - c. lower than among younger workers
 - d. unknown because there are so few workers over 65
19. The proportion of the U. S. population now age 65 or over is approximately:
- a. 3%
 - b. 13%
 - c. 23%
 - d. 33%
20. Medical practitioners tend to give older patients:
- a. lower priority than younger patients
 - b. the same priority than younger patients
 - c. higher priority than younger patients
 - d. higher priority if they have Medicare/Medicaid

21. The poverty rate (as defined by the federal government) among old people is:
- a. higher than among children under age 18
 - b. higher than among all persons under 65
 - c. about the same as among persons under 65
 - d. lower than among persons under 65
22. Most old people are:
- a. employed
 - b. employed or would like to be employed
 - c. employed, do housework or volunteer work, or would like to do some kind of work
 - d. not interested in any work
23. Religiosity tends to :
- a. increase in old age
 - b. decrease in old age
 - c. be greater in the older generation than in the younger generations
 - d. be unrelated to age
24. Most old people:
- a. are seldom angry
 - b. are often angry
 - c. are often grouchy
 - d. often lose their tempers
25. The health and economic status of old people (compared to younger people) in the year 2030 will:
- a. be higher than now
 - b. be about the same as now
 - c. be lower than now
 - d. show no consistent trend

Appendix C

Demographic and Educational Tool

1. Please specify your age.

2. Please identify your gender.
 - ☐ Male
 - ☐ Female

3. In which state do you currently reside?

4. Please specify your race.
 - ☐ White
 - ☐ Black
 - ☐ American Indian or Alaska Native
 - ☐ Asian
 - ☐ Native Hawaiian or Pacific Islander
 - ☐ Other (please specify)

5. Please specify your ethnicity.
 - ☐ Hispanic
 - ☐ Non-Hispanic

6. Please indicate your marital status.
 - ☐ Single
 - ☐ Married
 - ☐ Divorced/ Separated

7. Please indicate the type of nursing program in which you are enrolled.
 - ☐ Diploma
 - ☐ Associate degree
 - ☐ Bachelor degree

8. Do you perceive that you've had adequate patient care opportunities to feel competent providing care to older adults?
- ☐ Yes
- ☐ No
9. Please indicate the specific type of older person care/gerontology coursework you have had during your nursing program.
- ☐ A stand-alone gerontological course
- ☐ Gerontology integrated throughout the program
- ☐ Both
- ☐ Other (please specify)
10. Do you desire to work with older adult patients after graduation?
- ☐ Yes
- ☐ No
- ☐ Unsure

Appendix D

Recruitment Flyer

***COMPLETE AN 10-15 MINUTE QUESTIONNAIRE ON MY WEBSITE
FOR AN OPPORTUNITY TO WIN ONE OF FOUR \$25 AMAZON
GIFT CARDS!***



You are invited to participate in a national nursing research study exploring nursing student's perceptions of older adult care. Your participation may be beneficial to future healthcare. There are no anticipated risks or harm from participating in the study. To be included in the research study you must be:

- Enrolled full or part time in a pre-licensure nursing program in the United States (diploma, associate, or bachelor program)
- Currently beginning, in, or ending the final semester of the nursing program
- Able to speak and understand English
- Able to access the internet



To be excluded from the research study the student would be:

- Enrolled in any post licensure nursing program
- Enrolled in any nursing program outside of the United States
- Registered in any semester of a nursing program except the last semester
- Non-English speaking or without access to a computer or internet

Go to: nursingstudentsurvey.ml

Or, copy and paste this URL in your browser: https://iup.co1.qualtrics.com/SE/?SID=SV_3DBxgWms7cLwQXH

Elaine Little MS, RN
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This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone: 724/357-7730).

Appendix E

Broadcast Email Invitation

Hello final semester undergraduate nursing student,

You are invited to participate in a national nursing research study exploring student perceptions of older adult care. Your participation may be beneficial to future older adult healthcare. There are no anticipated risks or harm from participating in the study. You are only eligible to participate if you are in the final semester of an undergraduate nursing program in the United States, speak English and have access to a computer.

Your participation will require approximately 10-15 minutes of your time. The study involves the completion of an on-line questionnaire. At the end of the questionnaire, you may choose to enter a raffle for one of four \$25 Amazon.com gift cards in recognition of your time and efforts.

When you enter the survey, you will be provided additional information to make an informed decision about whether or not to participate in the study, prior to beginning the questionnaire. You can withdrawal at any time by exiting the survey.

If interested in learning more about participating, please go to my website: www.nursingstudentsurvey.ml

or go directly to the Qualtrics survey: https://iup.co1.qualtrics.com/SE/?SID=SV_3DBxgWms7cLwQXH

Thank you for your time and consideration,

Elaine Little
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This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone: 724/357-7730).

Appendix F
Professional Contact Email

Dear professional contact,

I am pursuing my PhD in Nursing and would like to ask for your assistance with my national nursing research study exploring nursing student perceptions of older adult care. I am attaching a flyer with all the inclusion and exclusion criteria, as well as the URL to my website where students may access my Qualtrics survey. It is my hope that you support this national nursing student survey by placing the attached flyer in an area where final semester nursing students may see the invitation to participate.

There are no anticipated risks or harm from participating in the study. Student participation would involve the completion of a 10-15 minute, on-line questionnaire. At the end of the questionnaire, the student may choose to enter a raffle for one of four \$25 Amazon.com gift cards in recognition of their time and efforts.

Thank you for your time and assistance! It is much appreciated,

Elaine Little
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Appendix G

Permission to Use Kogan KATOP Scale

Re: Permission Request for ATOP for use in my dissertation

Page 1 of 1

Subject: Re: Permission Request for ATOP for use in my dissertation

From: Nathan Kogan <kogann@newschool.edu>

Date: 08/01/11 11:33 AM

To: azkxawa@iup.edu <azkxawa@iup.edu>

Dear Ms. Little:

I am pleased to grant you permission to use my OP Scale in your proposed study.

It is possible that you have accessed the OP Scale in the form of matched positive-negative item pairs running down the page. It is important that the OP Scale NOT be administered in that format. Rather, the item pairings should be broken up and the items randomly ordered down the page. A random order can be readily achieved by writing item numbers on slips of paper, placing them in a container, mixing well, and withdrawing the slips one at a time to establish a random order. Please do not hesitate to contact me again if you should have any questions regarding the format, administration, or scoring of the OP Scale. You have my best wishes for the success of your project.

Sincerely,

Nathan Kogan, PhD
Professor Emeritus
Psychology Department
New School for Social Research

>>> "Elaine Little MS, RN" <azkxawa@iup.edu> 07/28/11 3:59 PM >>>

<https://imail.iup.edu/Session/2169719-89joba2uu5DKRIDE2I5i-k...> 8/5/2011

Appendix H

Permission to Use Palmore's Facts on Aging Quiz 1 Multiple Choice Version

Re: Permission to use FAQ1 multiple choice version

Page 1 of 1

Subject: Re: Permission to use FAQ1 multiple choice version

From: Erdman Palmore <ebp@geri.duke.edu>

Date: 08/09/11 12:22 PM

To: "Elaine Little MS, RN <azkxawa@iup.edu>

You have my permission. Please send me an abstract of your results.
Thanks, Erdman Palmore

At 12:33 PM 8/5/2011, you wrote:

Hello Dr. Palmore,

As per our phone conversation of Aug. 5, 2011, I appreciate your verbal permission to use your FAQ1 in my nursing doctoral dissertation entitled, Most Influential Factors Predicting a Nursing Student's Attitudes Toward and Intent to Work with Older Persons. Again, thank you for taking time from your busy schedule to provide me with additional written permission to use the tool with the minor edit to question #25 from 2010 to 2030. No change was needed to question # 19, the % of Americans over 65 is still approximately 13%.

I so enjoyed our discussion this afternoon regarding your new ebook on Amazon entitled Old Can Be Bold: 101 Answers to Questions of Aging. I am sure that I will enjoy reading it.

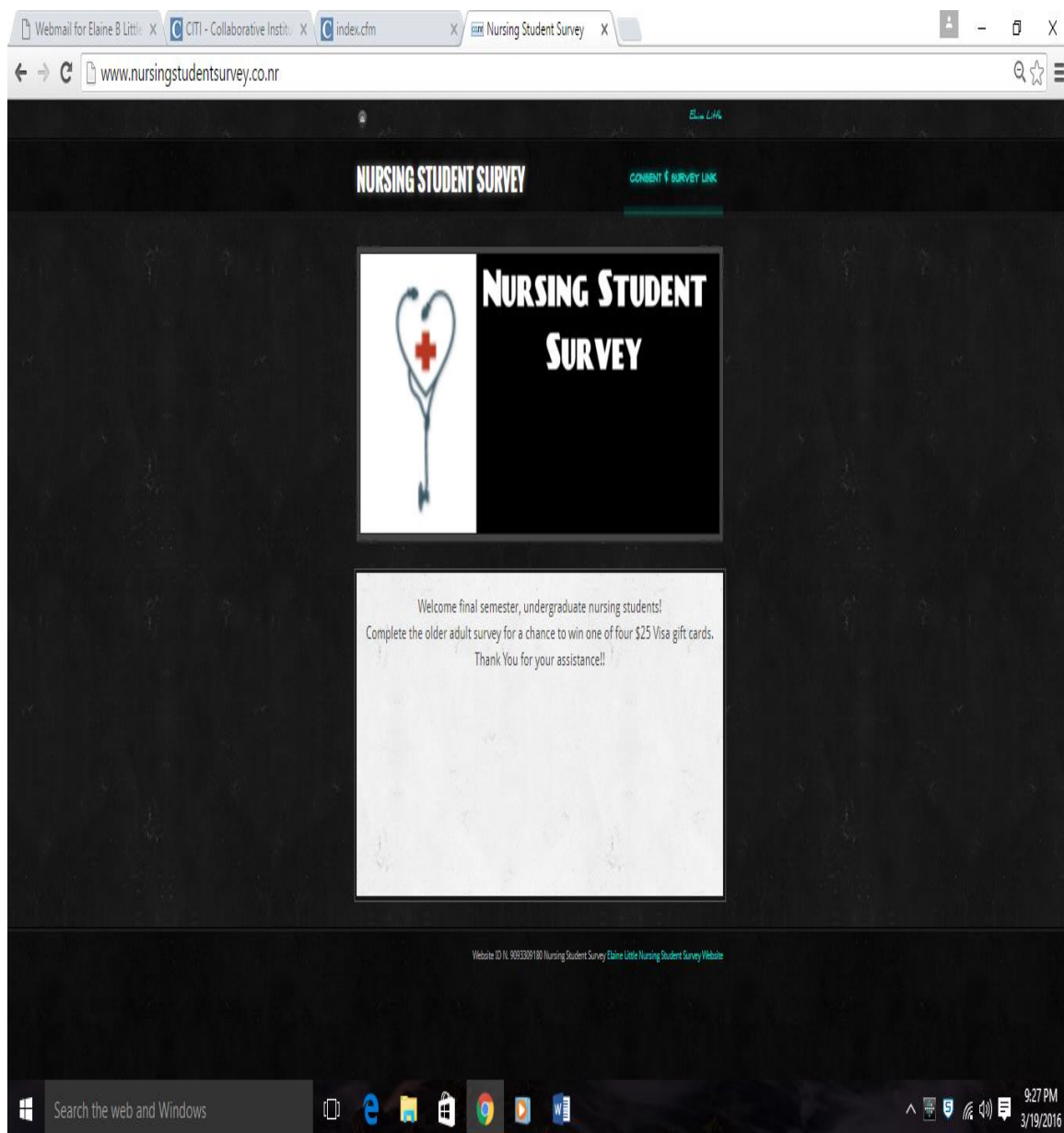
*Thank you,
Elaine Little MS, RN
Instructor
Nursing and Allied Health Dept.
Indiana University of Pennsylvania
226 Johnson Hall
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Indiana, PA 15705
724-357-7988 (office)
724-464-7966 (cell)*

Erdman B. Palmore, PhD
Box 3003 Duke Medical Center
Durham, NC 27710
919-660-7551
FAX: 919-684-8569

<https://imail.iup.edu/Session/88732-dZ34i24Yr8yxAl0Etv5i-kmb...> 8/15/2011

Appendix I

Website with URL Snapshot



Appendix J

IRB Approval Letter



Indiana University of Pennsylvania
www.iup.edu

Institutional Review Board for the
Protection of Human Subjects
School of Graduate Studies and Research
Stright Hall, Room 113
210 South Tenth Street
Indiana, Pennsylvania 15705-1048

P 724-357-7730
F 724-357-2715
irb-research@iup.edu
www.iup.edu/irb

April 4, 2016

Elaine Little
Dept of Nursing and Allied Health Professions
256 Johnson Hall

Dear Ms. Little:

Your proposed research project, "An Investigation of the Most Influential Factors Predicting Nursing Students' Knowledge and Attitude toward Older Persons," (Log No. 16-108) has been reviewed by the IRB and is approved. In accordance with 45CFR46.101 and IUP Policy, your project is exempt from continuing review. This approval does not supersede or obviate compliance with any other University requirements, including, but not limited to, enrollment, degree completion deadlines, topic approval, and conduct of university-affiliated activities.

You should read all of this letter, as it contains important information about conducting your study.

Now that your project has been approved by the IRB, there are elements of the Federal Regulations to which you must attend. IUP adheres to these regulations strictly:

1. You must conduct your study exactly as it was approved by the IRB.
2. Any additions or changes in procedures must be approved by the IRB before they are implemented.
3. You must notify the IRB promptly of any events that affect the safety or well-being of subjects.
4. You must notify the IRB promptly of any modifications of your study or other responses that are necessitated by any events reported in items 2 or 3.

The IRB may review or audit your project at random or for cause. In accordance with IUP Policy and Federal Regulation (45CFR46.113), the Board may suspend or terminate your project if your project has not been conducted as approved or if other difficulties are detected

Although your human subjects review process is complete, the School of Graduate Studies and Research requires submission and approval of a Research Topic Approval Form (RTAF) before you can begin your research. If you have not yet submitted your RTAF, the form can be found at <http://www.iup.edu/page.aspx?id=91683>.