ABSTRACT

The United States population of individuals over the age of 65 is projected to double by the year 2030, placing considerable strain on the healthcare system. This aging cohort will also contribute to a growing demand for Healthcare Professionals (HCP) trained and interested in working with this patient population. However, pre-professional students in the health professions have been shown to place low priority in working with older adults. The purpose of this study was to investigate pre-professional allied health students' attitudes, knowledge, beliefs and subjective norms about working with older adults and determine which variables contribute to predicting intention to work with the older adult patient population. Using Palmore’s Facts on Aging Quiz: Part 1 (FAQ1) and Kogan’s Old People Scale (KOPS), the survey also compared differences in knowledge level about aging and attitudes toward older adults based on intention to work with the older adult or not. Data collection for the study occurred during an introductory course at a large mid-western university, which included pre-professional students with plans to enroll in one of eleven allied health professional programs. Of the 205 students participating in the study, only 7 (3.4%) stated an intention to work with older adults after graduation despite all participants’ close relationships and work experience with older adults. The pre-professional students’ scores reflect a limited knowledge of aging and positive attitudes toward aging. Students intending to work with older adults were
less influenced by subjective norms than those students not intending to work in geriatrics. The results of this study indicate a need for further research regarding variables influencing career intentions to work with aging patients. Recommendations include further qualitative study, education in professional programs and curriculum modification to include geriatric content in Allied Health Professional preparation.
DEDICATION

To my grandfather, John Skulas.
ACKNOWLEDGMENTS

It has been a long road, and so many have offered support, encouragement, and expertise. I am grateful to all of you. I realize that I could not have done it without you – and it definitely wouldn’t have been as much fun. I am grateful to all, but would like to make some specific mention to some very special people.

To my advisor, Dr. David Stein, you have assisted me in navigating through the process with relative ease, endless patience, you have taught me to push myself, think creatively and offered encouragement. You were willing to work with me under somewhat unconventional circumstances (through a wedding and a baby). I have grown as a scholar through your thought-provoking challenges and I have learned as an adult educator through your example.

To my other committee members, Dr. Joseph Gliem & Dr. Margaret Teaford, I offer my gratitude. You offered endless encouraging words, flexibility, overwhelming support that I can and will do this, and a warm smile when I really needed it.

I owe the Respiratory Therapy Division a debt of gratitude for their persistent support throughout my graduate education – I could not have done this without your understanding and flexibility. Thanks Herb, Phil and Sarah. Thanks to the ladies of the subcommittee – Kay, Janelle, Jill, Kathie and Sarah – it is great to have friends like you all. I also want to thank the many Respiratory Therapy and Allied Medical Professions students that have supported and encouraged me to complete this journey. You all are the reason that I love coming to work everyday and why I have pursued education as a life path.
I feel very fortunate to have such strong support from family and friends. My dear friends Jill, Crissy and Heidi also deserve recognition for regularly lending sympathetic ears or a well-deserved break—even when they did not have the time or energy. Jill thanks for helping me grow the idea. To Sarah— you have helped me in so many ways— there aren’t enough trips to the vending machines or babysitting sessions to ever repay you. I know that I couldn’t have done it without your help, advice, and logical thinking or reality checks.

Finally, I am most indebted to my family. To my mother and father, I cannot begin to thank you for your help and encouragement throughout the years. To my mother— so much of who and what I am can be attributed to you. Your example of the profound impact of an educator has inspired me to follow in your big footsteps. To my grandparents, you are why I have such a passion for advocating for older adults— your encouragement has also kept me going all these years. I also want to thank my brother Mano, Uncle George and my in-laws Sid and Dee for all your encouraging words.

I want to thank little Niko, my beautiful son, for coming along and speeding up this long process. Your coming into my world really motivated me to finish this last step in my graduate education. I promise to make up any seconds that I have missed in the first six months of your life in order to complete this dissertation!

Lastly and most importantly, I owe my heartfelt gratitude to my husband, who has sacrificed more than anyone during my pursuit of this degree. Curt, you are my strongest advocate and dearest friend. Thank you for enduring this long road. This accomplishment would not have been possible without your constant love, support and encouragement.
VITA

July 26, 1974..................................................Born – Fairview Park, OH

1998 ...............................................................BS, Respiratory Therapy, The Ohio State University

1998................................................................BA, Psychology, The Ohio State University

2000................................................................MS, Allied Medical Professions Education, The Ohio State University

2004................................................................MA, Workforce Development and Education, The Ohio State University

2000................................................................Lecturer, Respiratory Therapy, The Ohio State University

2004 – Present................................................Instructor, Respiratory Therapy, The Ohio State University

PUBLICATIONS


FIELD OF STUDY

Major Field: Education. Area of Emphasis: Workforce Development and Education
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STATEMENT OF THE PROBLEM

The United States population of individuals over the age of 65 is projected to increase from 35 million (13%) to 70 million (20%) by the year 2030 (United States Bureau of the Census, 1996). This increase in aged Americans will place considerable strain on the healthcare system. For example, the International Longevity Center estimates that the annual medical bill for persons over 85 is approximately six times higher than that of individuals age 19 – 64 (International Longevity Center, 2000). These projected financial strains are explained by the older adult population living with several chronic conditions, necessitating increased visits with healthcare professionals and requiring substantial hospitalization time (Alliance for Aging Research, 2002). This aging cohort will also contribute to a growing demand for Healthcare Professionals (HCP) trained and interested in working with this patient population (International Longevity Center, 2000; Alliance for Aging Research, 2003). However, pre-professional students in the health professions have been shown to place low priority in working with older adults (Jansen & Morse, 2004; Berenbaum, 2000; Kaempfer, Wellman, & Himburg, 2003).
Several authors attribute this lack of interest to the pervasiveness of negative attitudes toward older adults among younger adults (Moriello, Smey, Pescatello, & Murphy, 2005; Kaempfer, et al., 2002; Gorelik, Damron-Rodriguez, Funderburk & Solomon, 2000; Damron-Rodriguez, Kramer, & Gallagher-Thompson, 1998; Hawkins, 1996; Burg, Waddell, Doty, Horne, Weilgas, & Davidson, 2001; Mosher-Ashley & Ball, 1999). Younger individuals have also been found to hold increased misconceptions of the older adult as frail, pessimistic, intolerable and complaining (Moriello, et al., 2005) as well as physically impaired and dependent on others (Mosher-Ashley & Ball, 1999). The increasing demand for health care professionals prepared to work with older adults warrants further study concerning what variables influence individuals to choose or not choose to work with this population in professional practice.

These negative misconceptions and low priority for working with older adults have been linked to negative attitudes and decreased knowledge about aging (Kaempfer, et al., 2002). Evidence of decreased knowledge, negative attitudes or both have been found in college students (Hawkins, 1996), students in health professional programs (Burg, et al., 2001; Kaempfer, et al., 2002), as well as allied health professionals in clinical practice (Giles, Patterson, Butler & Stewart, 2002). Conversely, few researchers have reported neutral or positive attitudes toward older adults held by college students (Mosher-Ashley & Ball, 1999), and practicing Allied Health Professionals (Horowitz, Savino & Krauss, 1999). The contradicting evidence in the literature supports the need for further investigation.

The majority of the aforementioned research related to examining healthcare students’ attitudes and knowledge of aging has been conducted with medical students,
student social workers and nurses (Burg, et al., 2001; Schigelone, 2003; van Zuilen, Rubert, Silverman, & Lewis, 2001). Although there are anticipated shortages of geriatric-trained physicians, social workers and nurses, there are also parallel projections in the allied health fields such as Physical Therapy, Occupational Therapy, Respiratory Therapy, Radiologic Technology, Pharmacy and Dental Hygiene (United States Department of Labor, 2001). Auxiliary or Allied Healthcare Professionals (AHP) contribute to 60% of the U.S. healthcare workforce. Considering the number and breadth of services provided to older adults, few AHPs are adequately prepared or knowledgeable about caring for elderly patients (Namazi & Green, 2003). Furthermore, student AHP attitudes & knowledge of older adults and interest in working with the elderly has not been addressed in the literature as variables that influence this intention. In the limited number of studies available that examined pre-professional undergraduate students, small sample sizes and study limitations restricted the generalizability of results (Moriello, et al., 2005). In addition, subjective norms and behavioral beliefs underlying attitudes of AHP students as they relate to intentions to work with older adults have not been studied. Further study is needed to examine how the variables that influence student AHPs to work with the older adult contribute to their intention.

Not only do attitudes, beliefs and subjective norms influence preference for working with older adults, but these variables have also been related to a negative influence on the quality of care delivered to the patient (Kaempfer, et al., 2002). For example, in a study of Physical and Occupational Therapists, negative attitudes were associated with less aggressive goals for older patients than younger patients with similar physical abilities (Moriello, et al., 2005). Due to substantial healthcare expenditures
related to care for the elderly, quality and appropriateness of healthcare delivery may
directly affect health outcomes and the individuals’ functional health status.

Given that the majority of problems of the older adult population are health
related, the AHP is in a unique position to contribute significantly to the quality of
healthcare delivered. Increasing knowledge has been associated with increasing positive
attitudes toward older adults (Kaempfer, et al., 2002). In order to improve the quality of
healthcare delivered to older individuals, attitudes, knowledge and beliefs regarding older
adults and aging should be further investigated. Furthermore, the examination of these
factors in future AHPs would contribute to addressing knowledge deficits early,
measuring attitudes, thereby improving in the recruitment and development of geriatric
trained AHPs. The investigation of knowledge, attitudes, beliefs and subjective norms in
pre-professional AHP students will contribute to the gaps in the literature regarding
variables that influence the intention to work with older adults after graduation.

PURPOSE AND RESEARCH QUESTIONS

A 115% increase in physician office and hospital visits by non-institutionalized
older adult is expected by the year 2030 (van Zuilen, et al., 2001). In addition to strain on
medical schools to provide geriatric training and increase the number of physicians
qualified to deliver age-specific care for the elderly population, there is a similar strain on
AHP preparation programs (Namazi & Green, 2003). The purpose of this study was to
investigate pre-professional allied health students' attitudes, knowledge, beliefs and
subjective norms (independent variables) about working with older adults and determine
which variables contribute to predicting intention to work with the older adult patient
population (dependent variable). In addition, the survey compared differences in
knowledge level about aging and attitudes toward older adults based on intention to work with the older adult or not. The Palmore’s Facts on Aging Quiz Part 1 (Palmore, 1998), which measures knowledge, and Kogan’s Old People Scale (Kogan, 1961), which measures attitude, were used to evaluate undergraduate pre-professional AHP majors at a large metropolitan University enrolled in an introductory course for pre-professionals. These students have not yet entered their major curriculum of study and have not had any clinical experience to influence their attitudes, knowledge and beliefs. In addition, participants were asked questions to reflect their subjective norms regarding working with older adults after graduation. External variables such as the participants’ age, gender, race, work experience with older adults and past relationships with older adults were also explored. The following research questions were addressed:

1a. What is the level of pre-professional allied health students’ knowledge of aging?

1b. What is the difference in knowledge scores from the Facts on Aging Quiz Part 1 between pre-professional allied health students who intend to work with older adults after graduation and those students who do not have an intention to work with older adults after graduation?

2a. What are the pre-professional allied health students’ attitudes toward older adults?

2b. What is the difference in attitude scores from the Kogan’s Old People Scale between pre-professional allied health students who intend to work with older adults after graduation and those students who do not have an intention to work with older adults after graduation?
3. What is the correlation among various predictors (age, gender, race, experience working with older adults, subjective norms, knowledge and attitude), as well as intention to work with older adults?

4. To what extent does the linear combination of age, race, gender, experience working with older adults, subjective norms, knowledge and attitude predict pre-professional allied health students’ intention to work with older adults after graduation?

5. What is the unique and combined contribution of selected predictors in explaining variance in intention to work with older adults after graduation?

6. Which predictors are most important in explaining the variance in pre-professional allied health students’ intention to work with older adults after graduation?

THEORETICAL FRAMEWORK

The Theory of Reasoned Action was developed by Fishbein & Ajzen (1980) to predict intention and outcome behavior and has been widely used in a variety of applications since its introduction in 1967. The theory is based on the supposition that individuals use available information to make rational decisions. The theory has been used to predict a range of health behaviors such as exercise, smoking cessation, and medication compliance for management of hypertension (Dunkle & Hyde, 1995). The theory was also used by Dunkle and Hyde to identify factors that influenced nursing and physical therapy students to work with older adults (Dunkle & Hyde, 1995). Researchers have used the theory to explain geriatric-related career choice in Physical
Therapists (Nosse, 1998; Dunkle & Hyde, 1995) as well as women’s occupational choice (Fishbein & Ajzen, 1980). The model describes the determinants of behavior as intention, attitude and the subjective norm toward the behavior studied (Fishbein & Ajzen, 1980). Figure 1.1 illustrates the model showing components and their relationships. Table 1.1 also details the constructs of the Theory of Reasoned Action (adapted from Fishbein & Ajzen, 1980).

Figure 1.1. Theory of reasoned action model (Fishbein & Ajzen, 1980).
Table 1.1. Constructs of the theory of reasoned action. Adapted from Fishbein & Ajzen (1980) and Dunkle & Hyde (1995).

<table>
<thead>
<tr>
<th>Construct</th>
<th>Definition</th>
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<tr>
<td>Behavioral intention</td>
<td>Immediate determinant of the action, influenced by attitude and subjective norm.</td>
</tr>
<tr>
<td>Attitude</td>
<td>Individual's positive or negative judgment about performing the behavior.</td>
</tr>
<tr>
<td>Subjective norm</td>
<td>Influence of social pressure to perform or not perform the behavior.</td>
</tr>
<tr>
<td>Behavioral beliefs</td>
<td>Beliefs about behavior</td>
</tr>
<tr>
<td>Normative beliefs</td>
<td>Beliefs about what others think about behavior</td>
</tr>
<tr>
<td>External variables</td>
<td>Other variables external to the model in predicting behavior and affect behavior only indirectly</td>
</tr>
</tbody>
</table>

The model for this study is proposed in Figure 1.2. The study was designed to predict pre-AHP students’ intention to work with older adults through examination of knowledge of aging, attitudes toward older adults, subjective norms, and examination of external variables like age, gender, work experience with older adults and past relationships with older adults.
DEFINITION OF TERMS

Intention:

Constitutive Definition – the indication that the individual plans to work with older adults after graduation.

Operational Definition – self-report of which age group of patients that the pre-AHP plans to work with after graduation. The participants will be asked “After you graduate, which age group(s) would you prefer to work with?” If the participant marks the age group “older adult (over age 65), they will be determined to have an intention to work with older adults. If they do not mark the older adult category, they will be determined to not have an intention to work with older adults. This variable will be nominal dichotomous.
Attitude toward older adults:

Constitutive Definition - an individual’s positive or negative evaluation of older adults.

Operational Definition- the pre-AHP students’ attitude toward older adults will be determined by their score on the Kogan’s Attitudes Toward Old People Scale (Kogan, 1961). This variable will be interval scale of measurement.

Subjective Norm:

Constitutive Definition - influence of social pressure to perform or not perform the behavior.

Operational Definition - self-report of their subjective norm will come from their answer to the question “How much would your decision to work with geriatric patients in your professional career depend on the following individuals?” The participants will indicate their answer by circling how much they (as individuals), their parents, their family and their friends influence their decision to work with geriatric patients. This variable will be interval scale of measurement.

ASSUMPTIONS AND LIMITATIONS

The following limitations are identified:

1. The participants were asked to self-report their intention to work with older adults after graduation. While intention has been linked to behavior in the literature (Fishbein & Ajzen, 1980; Dunkle & Hyde, 1995), the study did not confirm the students’ actual career choice due
to the limitation of time. The self-report of intention based on the questions asked may not be an accurate representation of their actual behavior after graduation.

2. The study population was a convenience sample of undergraduate students enrolled in a University course. While attendance is recorded and recommended, the researcher cannot control the number of students in attendance on the day of data collection. Also, participation in the study was voluntary; subjects were not penalized for refusal to participate in the study.

3. Although age and race were examined in the study as predictors of intention to work with older adults after graduation, the population of pre-professional allied health students participating did not vary in terms of their age and race.

4. This study examined variables that have been demonstrated in the literature to be related to influencing intention to work with older adults in a variety of groups (professional students, practicing professionals). The study variables that influence intention in pre-professional allied health students may include variables not examined by this study.

SIGNIFICANCE OF THE STUDY

This study is significant in contributing to the literature regarding career choice in geriatrics for pre-professional allied health students. It is important to identify predictors of intention to work with older adults early so that interventions may be developed to
foster positive attitudes, address behavioral beliefs and increase knowledge of aging. The School of Allied Medical Professions at The Ohio State University and similar programs with Geriatrics and Gerontology majors will benefit from the results of the study in that they will have insight regarding how to appropriately recruit students to choose a healthcare career in aging. Last, but not least, better preparation of geriatric-trained health care providers will increase the quality of care received by the future patients of these providers.
CHAPTER 2

REVIEW OF THE LITERATURE

INTRODUCTION

Six-thousand Americans turn 65 everyday, and population projections estimate that in ten years, this figure to reach an astonishing 10,000 Baby Boomers becoming 65 per day (Alliance for Aging Research, 2002). Statistical projections predict that by the year 2030, the population of U.S. older adults over the age of 65 will double its current size, increasing from 35 million to 70 million (United States Bureau of the Census, 2001). This shift in the population will require attention, preparation and planning in many areas including housing, services and especially healthcare. Currently, by the age of 75, most Americans are living with three or more chronic medical conditions and taking more than 4.5 medications at a time. Older adults account for 36% of all hospital stays and 49% of all care in hospitals (Alliance for Aging Research, 2002).

Regrettably, many believe that health professionals will be ill prepared to deal with these older adults. The Alliance for Aging Research (2002) states:

Unfortunately, very few health professionals in the U.S….have been exposed to the techniques and knowledge of geriatric health care as part of their professional training. This creates a dangerous “disconnect” between the education of America’s health care providers and the aging of the population at large, and especially their patients (p. 3).
The Alliance for Aging Research (2002) lists ten barriers that American health professions will face in preparing for the aging boom in the number of individuals over the age of 65 as:

- age denial
- older patients marginalized
- lack of public awareness of the geriatrics gap
- scarcity of academic leaders
- lack of academic infrastructure in geriatrics
- geriatric medicine not valued
- inadequate reimbursement
- lack of coordination within medicine
- clinical trials do not include the aged
- little research on the aging process (p. 4)

An examination of the barriers mentioned above reveals that many of these barriers might be overcome or addressed through curriculum change, awareness, and additional research. The purpose of this study was to explore factors that influence an individual (pre-allied health student) to work with older patients after graduation, which will contribute to addressing these barriers and the challenges healthcare faces in preparing a workforce ready to deal with the aging population.

The following is a review of the literature based on a search of several databases including Medline, Ageline, CINAHL, and PubMed. Years included in the search were 1966 to the present. However, most literature reviewed was from 1990 to the present.
Key words that were used to search included attitude, ageism, knowledge of aging, geriatric, gerontology, allied health, college students, subjective norms, older adults and aging.

THEORETICAL FRAMEWORK - THE THEORY OF REASONED ACTION

The Theory of Reasoned Action (TRA) was developed by Fishbein and Ajzen (1980) to predict intention and outcome behavior and has been widely used in a variety of applications since its introduction in 1967. The TRA was developed initially to understand the relationship between attitudes and behavior (Montano & Kasprzyk, 2002). The theory is based on the supposition that individuals use available information to make rational decisions. Fishbein and Ajzen (1980) argue that:

people consider the implications of their actions before they decide to engage or not engage in a given behavior…most actions of social relevance are under volitional control and …a person’s intention to perform (or to not perform) a behavior as the immediate determinant of the action (p. 5).

The model of the TRA illustrates that behavior can be predicted from behavioral intentions, attitudes and the influence of subjective norms (Fishbein & Ajzen, 1980).

Figure 2.1 is a schematic representation of the model.
The determinants of intention in the TRA model are attitude, subjective norm, normative beliefs and behavioral beliefs. Fishbein and Ajzen (1980) define attitude toward the behavior as the individual’s positive or negative evaluation toward performing the behavior. Attitude toward the behavior is typically measured by asking the individual to rate their level of agreement on a five-point Likert scale: strongly disagree to strongly agree (Fishbein & Ajzen, 1980). According to the model, attitudes develop as a function of beliefs. Specifically, the TRA identifies the beliefs that underlie attitude are behavioral beliefs. For example, if an individual holds largely positive beliefs regarding performing a specific behavior- attitude toward the behavior will also be positive. Similarly, negative behavioral beliefs regarding performing a specific behavior will lead to negative attitudes toward the behavior. Behavioral beliefs are also measured by asking the individual to rate the beliefs concerning performing the behavior on a Likert scale.
Based on the TRA model, subjective norms are also determinants of behavior and influence intention toward the behavior. Subjective norms reflect the “person’s belief that most of her important others think she should (or should not) perform the behavior in question” (Fishbein & Ajzen, 1980, p. 73). These subjective norms are influenced by normative beliefs, or what important referents would think if they performed the behavior. Fishbein and Ajzen (1980) further state “normative beliefs are thus similar to subjective norms, except that they involve specific individuals or groups rather than a generalized important other” (p. 73). The influence of external variables, such as age, sex, social class and race are addressed by Fishbein and Ajzen (1980). They state:

> Although we recognize the potential importance of such factors, they do not constitute an integral part of our theory but are instead considered to be external variables. From our point of view, external variables may influence the beliefs a person holds or the relative importance he attaches to attitudinal and normative considerations. (p. 9)

The TRA has been used in a wide variety of applications to predict a vast spectrum of behaviors (Dunkle & Hyde, 1995). For example, the TRA has been used in health education to predict smoking behavior (deVries & Kok, 1986), diabetes management (deWeerdt, Visser, Kok & VanderVeen, 1990) and to predict condom use (Montano & Kasprzyk, 2002). Also, the theory has been used to investigate intention to: participate in distance education (Becker & Gibson, 1998), engage in science learning activities (Butler, 1999) and work with older adults (Dunkle & Hyde, 1995).

One example of the TRA’s use in the allied health literature was found in a study by Becker and Gibson (1998). The authors used Fishbein and Ajzen’s theory of reasoned action was utilized to predict respiratory care practitioners’ (RCP) intention toward
completion of a baccalaureate degree by means of distance education. The researchers found, through an analysis of 142 participants, that attitude and subjective norm were significant predictors of the RCP’s behavioral intentions to enroll in distance continuing professional education and explained 46% of variance. This study supports the TRA for predicting behavioral intentions (Becker & Gibson, 1998).

The only study found that investigated allied health professionals’ intention to work with older adults using the TRA to predict intention was done by Dunkle and Hyde (1995). They utilized Fishbein and Ajzen’s (1980) TRA model to investigate physical therapy (PT) and registered nurse (RN) students’ intentions toward working with older adults. The researchers studied 176 individuals enrolled in programs throughout the California and Northwest United States. The researchers, using survey methodology, studied the attitudes, intentions and subjective norms influencing the PT and RN students to work with older adult patients. These investigators also followed-up participants to determine the actual job selection. Using a hierarchical regression analysis, the researchers found that attitude and subjective norm were correlated with intention and both contributed to the prediction of intention for the student groups ($R^2 = .35$ for PT and $R^2 = .37$ for RN). These results suggest that for PT, 35% of the variance (between working with older adults and the independent variables of attitude and subjective norm) was explained and 37% of the variance was explained for RN students. The researchers also examined job selection (behavior) as a follow-up to their survey. They found that the Spearman’s correlation between behavior and intention for PT = .26 and for RN = .31, which reached significance ($p<.01$). In the last stage of testing, Dunkle and Hyde (1995) identified normative beliefs underlying attitude. The researchers found that
working with elderly patients, geriatric staff and their close friends supported the PT students’ beliefs, while only family members were identified as beliefs supporting the RNs’ intentions. Recommendations brought forth by the results of this study included attention and group discussion with educators regarding factors that were identified as influencing student intention (family reactions to students working with older adults, decreased team interaction and collaboration, low salary, decreased skill application, incontinence, interesting patients and more time with families and patients). The researchers also suggest that faculty also give equal attention, worthiness and prestige to geriatric care as a career option as they would other areas of practice (Dunkle & Hyde, 1995).

Dunkle and Hyde’s (1995) study is helpful in examining variables that predict allied health professional students’ intention to work with older adults. They found that the strongest predictors of intent to work with geriatric patients were attitudes and subjective norm. The external variables measured (previous experience, working with elderly persons, previous social experience, geriatric/integrated courses and age) did not correlate with intention as is often suggested in the aging and allied health professional literature (Berenbaum, 2000; Burg, et al., 2001). Dunkle and Hyde’s (1995) study supports the use of a theory-based model to examine variables useful in predicting intention to work with older adults. There are no studies using the TRA to predict the pre-professional allied health students’ intention to work with geriatric patients. The proposed study employed similar research methods and examined similar variables as Dunkle and Hyde (1995) to predict the intentions of pre-allied health students. While there is no specific examination of the intentions of pre-allied health students outlined in
the literature, there have been investigations of college students’ attitudes toward older adults.

COLLEGE STUDENT ATTITUDES TOWARD AGING

Several authors have sought to describe and explain college students’ attitudes toward aging and older adults (Hawkins, 1996; Mosher-Ashley & Ball, 1999; Gorelik, et al., 2000; Funderburk, Damron-Rodriguez, Storms & Solomon, 2006). The results suggest that college students’ attitudes toward aging individuals are not conclusively negative or positive (Mosher-Ashley & Ball, 1999). However, the literature supports the influence of these attitudes on an individuals’ decision to work with older adults following graduation (Mosher-Ashley & Ball, 1999; Gorelik, et al., 2000). In light of the upcoming increase in the population of adults over the age of 65, attitudes have been studied more extensively in the literature. Hawkins (1996) states that the importance of examining attitudes is that there could be societal ramifications if such attitudes are negative. The researcher states, “because today’s students most certainly will work with people who are either elderly or facing the prospect of becoming elderly, prejudices toward the elderly must be addressed” (p. 278).

Hawkins (1996) assessed college students’ attitudes toward male and female older adults of three target age groups: the young old (65-74), old old (75 – 99) and centenarians (100+). In a convenience sample of 420 college students (171 males, 249 females), the researcher found that the undergraduate students viewed the male and female older adults more negatively as the target groups aged. The students were asked to respond to a 20-item semantic differential scale developed to assess attitudes and perceptions toward aging. The participants in Hawkins’ (1996) study did not rate one
item favorably across gender and within the age groups and rated the older adult targets more negatively than in past studies using the same instrument. The researcher warns that stereotypes and prejudices toward the elderly have implications in the clinical environment. As a result of this study, the researcher urges that education and naturalistic research and observation should be integrated into the curriculum planning and diversity education (Hawkins, 1996). Other professional areas have also investigated student attitudes and knowledge about aging.

ALLIED HEALTH PROFESSIONALS/STUDENTS AND AGING

Several of the AHP areas have research literature related to alleviating and addressing ageism and decreased interest in working with the older population (Horowitz, et al., 1999). Researchers point out that Allied Health students and professionals will be called upon to address the health and disability needs of the aging population (Namazi & Green, 2003). In addition, the Department of Labor, Bureau of Professions predicts that the number of allied health jobs in the United States will continue to rise as the number of persons in the population over the age of 65 increases (United States Department of Labor, 2004).

Namazi & Green (2003) point out that AHPs comprise an estimated 60% of the health care workforce in the United States. The U.S. Department of Labor, Bureau of Labor Statistics, Occupational Outlook Handbook (2004) outlines the percent change in employment projected to grow the fastest between 2002 and 2012. Of the 20 occupations listed, ten of the occupations listed fall under the umbrella of Allied Health Professions. The Bureau of Labor Statistics also estimates a greater than 35% increase in employment for all ten occupations (medical assistants, physician assistants, home health aides,
medical records and health information, physical therapy assistants, dental hygienists, occupational therapy aides, dental assistants and personal home care aides). Namazi and Green (2003) urge allied medical professional programs to recognize the importance of integrating gerontology modules into the curriculum in order to address the impending need for more gerontology trained health professionals in the future. The researchers recommend modularization of gerontological course content as one avenue of addressing this need.

Moriello, et al. (2005) investigated the influence of a six–hour educational intervention on attitudes and knowledge of pre-allied health students toward aging adults. The researchers recruited 41 pre-allied health students participating in summer orientation at University of Connecticut. The individuals volunteering to participate were randomly assigned to a treatment or control group for the study. Those in the treatment group participated in a six-hour workshop. Utilizing a post-test only research design, the researchers administered instruments to both the control and treatment groups at one week following the workshop. The participants were administered the Kogan’s Old People Scale (Kogan, 1961), which examines attitudes toward aging and Palmore’s Facts on Aging Quiz (Palmore, 1998), which provides a score of knowledge about older adults. The instruments were again administered to both groups 10 weeks following the workshop. The control group participated in the workshop following the 10-week measurement and all students participating in the study received a one-credit hour “A” for their full participation.

The results of the analysis from this study were consistent with previous research that states the knowledge and attitudes of college students toward older adults has room
for improvement. Based on the descriptive statistics of the investigation, very few of the college freshmen reported contact with older adults on a frequent basis. The scores on the Palmore’s Facts on Aging, unfortunately, were diminished in the treatment group, when measured at 10 weeks post workshop participation, but were significantly increased at one week following the workshop (p = .031). The researchers also reported no statistically significant difference in students’ attitudes was noted at one and ten weeks following the workshop. The researchers admit that there were several limitations of the study, which threaten the generalizability of the results. First of all, the small sample size of participants in both the treatment (n= 19) and control (n=22) decreases the power of the study overall. The researchers also had to face attrition, quasi-experimental design and possible diffusion of treatment as limitations to their research result interpretation. Moriello, et al. (2005) did not choose to examine the pre-AHP students’ normative beliefs or subjective norms regarding working with older adults, nor did they ask students of their intentions to work with that population.

The need for gerontological training in AHP educational programs is echoed by several research studies. Damron-Rodriguez et al. (1998) argue that the market demand for health professionals adequately prepared to serve the older adult patient population is not being met by education program curriculum and training. They further state that a major barrier to meeting this market demand is health professional students and trainees’ declining interest in working with older adults. Stated reasons for this decline in gerontology-related practice are poor attitudes toward aging individuals, knowledge deficits related to aging, and perception of gerontological practice as “low status” (Damron-Rodriguez, et al., 1998).
SUMMARY

Ageism and decreased knowledge about aging continue to be significant issues with regard to preparing the future workforce of health professionals (Moriello, et al., 2005). Understanding which select variables are useful in predicting pre-allied health students’ intentions to work with geriatric patients will contribute to the growing body of literature related to recruiting and adequately preparing allied health professionals to work with the aging population. By examining pre-professional allied health students’ knowledge, attitudes and beliefs about working with older adults, interventions designed to increase knowledge, foster positive attitudes and modify behavioral beliefs will allow programs to draw increased numbers of students to geriatric practice at an earlier and crucial time in the students’ educational preparation. The results of the study are useful to gerontology educators as well as educators in allied health. As we strive to increase the number of well-prepared practitioners, the variables influencing individuals to work or not work with the aging population will be integral in recruitment and preparation of the workforce. In addition, the study answered unanswered questions regarding the career intentions of the pre-professional allied health student.
CHAPTER 3

METHODS

The purpose of this study was to describe the characteristics and examine the relationship between attitudes, knowledge and subjective norms and the pre-professional allied health students’ intention to work with older adults after they graduate. The study measured variables that have been identified as contributing to an individual’s intention to work with older adult patients in their professional practice. The variables examined were age, race gender, experience with older adults, contact with older adults, attitude toward older adults, subjective norms and knowledge of aging.

RESEARCH QUESTIONS

The following research questions were addressed:

1a. What is the level of pre-professional allied health students’ knowledge of aging?

1b. What is the difference in knowledge scores from the Facts on Aging Quiz (Palmore, 1998) between pre-professional allied health students who intend to work with older adults after graduation and those students who do not have an intention to work with older adults after graduation?
2a. What are the pre-professional allied health students’ attitudes toward older adults?

2b. What is the difference in attitude scores from the Kogan’s Old People Scale (Kogan, 1961) between pre-professional allied health students who intend to work with older adults after graduation and those students who do not have an intention to work with older adults after graduation?

3. What is the correlation among various predictors (age, gender, race, experience working with older adults, subjective norms, knowledge and attitude), as well as intention to work with older adults?

4. To what extent does the linear combination of age, race, gender, experience working with older adults, subjective norms, behavioral beliefs, knowledge and attitude predict pre-professional allied health students’ intention to work with older adults after graduation?

5. What is the unique and combined contribution of selected predictors in explaining variance in intention to work with older adults after graduation?

6. Which predictors are most important in explaining the variance in pre-professional allied health students’ intention to work with older adults after graduation?

RESEARCH DESIGN

The study design was cross-sectional, correlational. The dependent variable measured was the pre-professional allied health students’ intention to work with the older adult population after graduation. This was defined operationally as the pre-AHP
student’s answer to a question asking them to indicate which age group of patients that they intend to work with upon graduation. The independent variables in the study were age, race, gender, experience with older adults, contact with older adults, attitude toward older adults, subjective norms, and knowledge of aging.

STUDY POPULATION

The population for this study was all current pre-professional Allied Health students enrolled in an introductory University course. This introductory course had an enrollment of 324 students. The entire population of students in the course was invited to participate in the study.

The population size was determined by consulting the recommended ratio of the number of observations to the number of variables as to not violate the assumptions of the statistical test. Hair (1998) and Stevens (1992) recommend 20 subjects per predictor variable. Given this study will examine 6 predictor categories of independent variables, the minimum number of subjects desired is 120.

INSTRUMENTATION

The subjects’ attitudes toward older adults were measured using the Kogan’s Old People Scale (KOPS) (Kogan, 1961) (Appendix A). This instrument has been used in a variety of populations and has established validity and reliability. The KOPS results in a score of the individuals’ attitudes toward older adults. The instrument consists of 34 items, 17 framed in a positive manner and 17 framed negatively. Respondents are asked to rate their level of agreement, using a six-point Likert scale ranging from strongly disagree to strongly agree. To score the instrument, negative items are reversed and a
higher score reflects a more positive attitude. Kogan reported split half reliabilities ranging from .66 to .83 (Kogan, 1961).

The subjects’ knowledge of aging was measured by the Palmore’s Facts on Aging Quiz 1 (FAQ1) (Palmore, 1998) (Appendix B). The FAQ1 consists of a 25 item statements to which the respondent must indicate true or false. These items have a high degree of face validity and are documented by research evidence. The instrument has been widely used and found to be reliable and valid in a variety of populations (Palmore, 1998). The reliability reported for the instrument ranges from 0.50 to 0.80 (Kaempfer, et al., 2002).

Subjective norms and other demographic data were examined using a series of survey questions (Appendix C). Permission was obtained from the authors, Nathan Kogan and Springer Publishing, before distribution of the KOPS and FAQ1 instruments (Appendix D). The variables formed for the analysis are detailed in Table 3.1. A pilot test was administered prior to data collection with the pre-AHP students enrolled in the University course. Internal consistency was measured and the Cronbach’s alpha coefficients were computed for attitude (.813), knowledge (.672), and normative beliefs (.832).

The internal consistency of the data obtained on the questionnaire with the study participants (N = 205) was tested. The Cronbach’s alpha coefficients were computed for attitude (.869), knowledge (.580), and normative beliefs (.867).
<table>
<thead>
<tr>
<th>Variable</th>
<th>Instrument Addressing Variable &amp;/or Question</th>
</tr>
</thead>
</table>
| Gender                           | Instrument: Knowledge, Behaviors and Attitudes of Pre-Allied Health Students Survey Instrument  
                                 | Question: What is your gender? |
| Experience with older adults     | Instrument: Knowledge, Behaviors and Attitudes of Pre-Allied Health Students Survey Instrument  
                                 | Question: Have you ever worked with older adults (over the age of 65) in a job or volunteer opportunity? If yes, in what type of setting did you work with them? |
| Contact with older adults        | Instrument: Knowledge, Behaviors and Attitudes of Pre-Allied Health Students Survey Instrument  
                                 | Question: Have you ever had a close relationship with an older adult (for example, a grandparent or family friend)? |
| Subjective norm                  | Instrument: Knowledge, Behaviors and Attitudes of Pre-Allied Health Students Survey Instrument  
                                 | Question: How much would your decision to work with geriatric patients in your professional career depend on the following individuals? |
| Attitude toward older adults     | Instrument: Kogan’s Old People Scale (KOPS) |
| Knowledge about aging            | Instrument: Palmore’s Facts on Aging Quiz 1 (FAQ1) |

Table 3.1. Variables and corresponding questions/instruments
DATA COLLECTION PROCEDURES

Permission was obtained from the course instructor and data collection occurred during regular class time of the two Allied Medical Professions 100 course offerings. Students were asked to participate in the study. All students that agreed to participate were given the KOPS (Appendix A), the FAQ1 (Appendix B) and the “Knowledge, Beliefs and Attitudes of Pre-Allied Health Students” instrument, which contains all demographic, experience, and subjective norm–related questions (Appendix C). The students were informed that their participation was voluntary and refusal to participate did not negatively affect their grade in the course. Any student that was unwilling to participate was given an alternative assignment by the instructor to complete during the designated class time.

DATA ANALYSIS PROCEDURES

Data was analyzed using Statistical Program for the Social Sciences (SPSS), version 14.0. The type of statistical test used to analyze each research question is outlined in Table 3.2.
<table>
<thead>
<tr>
<th>Research Question</th>
<th>Variable</th>
<th>Statistical Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a. What is the level of pre-professional allied health students’ knowledge of aging?</td>
<td>-Knowledge of aging score: Interval</td>
<td>Descriptive statistics:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-mode</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-range</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-SD</td>
</tr>
<tr>
<td>1b. What is the difference in knowledge scores from the Facts on Aging Quiz between pre-professional allied health students who intend to work with older adults after graduation and those students who do not have an intention to work with older adults after graduation?</td>
<td>-Knowledge of aging score: Interval</td>
<td>Descriptive statistics:</td>
</tr>
<tr>
<td></td>
<td>-Intention to work with older adults:</td>
<td>-mean</td>
</tr>
<tr>
<td></td>
<td>dichotomous nominal</td>
<td>-mode</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-range</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-SD</td>
</tr>
<tr>
<td>2a. What are the pre-professional allied health students’ attitudes toward older adults?</td>
<td>-Attitude toward older adults score:</td>
<td>Descriptive statistics:</td>
</tr>
<tr>
<td></td>
<td>Interval</td>
<td>-mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-mode</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-range</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-SD</td>
</tr>
<tr>
<td>2b. What is the difference in attitude scores from the Kogan’s Old People Scale between pre-professional allied health students who intend to work with older adults after graduation and those students who do not have an intention to work with older adults after graduation?</td>
<td>-Attitude toward older adults score:</td>
<td>Descriptive statistics:</td>
</tr>
<tr>
<td></td>
<td>Interval</td>
<td>-mean</td>
</tr>
<tr>
<td></td>
<td>-Intention to work with older adults:</td>
<td>-mode</td>
</tr>
<tr>
<td></td>
<td>dichotomous nominal</td>
<td>-range</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-SD</td>
</tr>
</tbody>
</table>

Continued

Table 3.2. Statistical tests used to analyze each research question.
### Table 3.2. (continued)

3. What is the correlation among various predictors (gender, experience working with older adults, subjective norms, knowledge and attitude), as well as intention to work with older adults?

<table>
<thead>
<tr>
<th>Independent variables:</th>
<th>Correlations:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender: nominal dichotomous</td>
<td>- Point biserial for interval independent variables and the nominal dichotomous dependent variable</td>
</tr>
<tr>
<td>Experience working with older adults: dichotomous nominal</td>
<td>- Phi for nominal dichotomous independent variables and the nominal dichotomous dependent variable</td>
</tr>
<tr>
<td>Subjective norms: interval</td>
<td>- Cramer’s V for nominal multichotomous independent variables and the nominal dichotomous dependent variable</td>
</tr>
<tr>
<td>Knowledge of aging interval</td>
<td></td>
</tr>
<tr>
<td>Attitude toward older adults: Interval</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Intention to work with older adults: dichotomous nominal</th>
</tr>
</thead>
</table>

4. To what extent does the linear combination of age, race, gender, experience working with older adults, subjective norms, knowledge and attitude predict pre-professional allied health students’ intention to work with older adults after graduation?

<table>
<thead>
<tr>
<th>Prediction:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Logistic regression will be used (interval, ratio or dummy coded independent variables and nominal dichotomous dependent variable)</td>
</tr>
</tbody>
</table>

Continued
### Table 3.2. (continued)

<table>
<thead>
<tr>
<th></th>
<th>Question</th>
<th>Methodology</th>
</tr>
</thead>
</table>
| 5 | What is the unique and combined contribution of selected predictors in explaining variance in intention to work with older adults after graduation? | Prediction:  
- Partial correlations will be calculated for unique contribution  
- Multiple correlations will be calculated for combined contribution |
| 6 | Which predictors are most important in explaining the variance in pre-professional allied health students’ intention to work with older adults after graduation? | Explanation:  
- Logistic regression will be used (interval, ratio or dummy coded independent variables and nominal dichotomous dependent variable) |
CHAPTER 4

RESULTS

The purpose of the study was to investigate pre-professional allied health students' attitudes, knowledge, beliefs and subjective norms (independent variables) about working with older adults after graduation and determine which variables contribute to predicting intention to work with the older adult patient population (dependent variable). In addition, the study compared differences in knowledge level about aging and attitudes toward older adults based on intention to work with the older adult or not. The Palmore’s Facts on Aging Quiz Part 1 (which measures knowledge) and Kogans Old People Scale (KOPS) (which measures attitude) were used to measure undergraduate pre-professional Allied Health Professions (AHP) majors at a large mid-western university enrolled in an introductory course for pre-professionals. In addition, participants were asked questions to reflect their subjective norms regarding working with older adults after graduation. External variables such as the participants’ age, gender, work experience with older adults and past relationships with older adults were also explored.
This chapter will report the results and data analysis findings of the study. The following research questions will be addressed:

1a. What is the level of pre-professional allied health students’ knowledge of aging?

1b. What is the difference in knowledge scores from the Facts on Aging Quiz between pre-professional allied health students who intend to work with older adults after graduation and those students who do not have an intention to work with older adults after graduation?

2a. What are the pre-professional allied health students’ attitudes toward older adults?

2b. What is the difference in attitude scores from the Kogan’s Old People Scale between pre-professional allied health students who intend to work with older adults after graduation and those students who do not have an intention to work with older adults after graduation?

3. What is the correlation among various predictors (gender, experience working with older adults, subjective norms, knowledge and attitude), as well as intention to work with older adults?

4. To what extent does the linear combination of age, gender, experience working with older adults, subjective norms, knowledge and attitude predict pre-professional allied health students’ intention to work with older adults after graduation?
5. What is the unique and combined contribution of selected predictors in explaining variance in intention to work with older adults after graduation?

6. Which predictors are most important in explaining the variance in pre-professional allied health students’ intention to work with older adults after graduation?

DESCRIPTION OF THE POPULATION

Data were collected during the last class meetings of the Allied Medical Professions 100 (AM 100) course at a large mid-western university. Survey participants were limited to the students present in class on the days of data collection. Data were collected during the two different class offerings of AM 100 for students enrolled in the course during November 2005. All students present on the days of data collection chose to complete the survey. A total of 205 (63.27%) students participated in the study. The mean age of participants was 18.32 years of age. Demographic data for the 205 study participants are outlined in Table 4.1.

The students participating in the study were largely first year undergraduate freshman (96.6%), white (78.5%), and 18 years of age (71.7%). The study participants were mostly female (69.8%). Table 4.2 details the participants’ intended major area of study in the Allied Medical Professions.
<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean (SD)</th>
<th>Median</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 18</td>
<td>3</td>
<td>18.32 (.81)</td>
<td>18.00</td>
<td>-</td>
</tr>
<tr>
<td>18</td>
<td>147</td>
<td>-</td>
<td>-</td>
<td>71.7</td>
</tr>
<tr>
<td>19</td>
<td>49</td>
<td>-</td>
<td>-</td>
<td>23.9</td>
</tr>
<tr>
<td>20</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>1.5</td>
</tr>
<tr>
<td>over 20</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>143</td>
<td>-</td>
<td>-</td>
<td>69.8</td>
</tr>
<tr>
<td>Male</td>
<td>62</td>
<td>-</td>
<td>-</td>
<td>30.2</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White (not Hispanic)</td>
<td>161</td>
<td>-</td>
<td>-</td>
<td>78.5</td>
</tr>
<tr>
<td>Black (not Hispanic)</td>
<td>14</td>
<td>-</td>
<td>-</td>
<td>6.8</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>4.9</td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td>11</td>
<td>-</td>
<td>-</td>
<td>5.4</td>
</tr>
<tr>
<td>American Indian or Alaskan</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>0.5</td>
</tr>
<tr>
<td>Native</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>3.9</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>International Student</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>2.5</td>
</tr>
<tr>
<td>No</td>
<td>200</td>
<td>-</td>
<td>-</td>
<td>97.6</td>
</tr>
<tr>
<td><strong>Years of College</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; year undergraduate</td>
<td>198</td>
<td>-</td>
<td>-</td>
<td>96.6</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; year undergraduate</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>2.4</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; year undergraduate</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>1.0</td>
</tr>
</tbody>
</table>

N = 205

Table 4.1. Descriptive statistics for demographic variables
### Undergraduate Major

<table>
<thead>
<tr>
<th>Major</th>
<th>N</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athletic Training</td>
<td>54</td>
<td>26.3</td>
</tr>
<tr>
<td>Circulation Technology</td>
<td>8</td>
<td>3.9</td>
</tr>
<tr>
<td>Health Information Management and Systems</td>
<td>5</td>
<td>2.4</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>30</td>
<td>14.6</td>
</tr>
<tr>
<td>Did not declare track</td>
<td>2</td>
<td>0.9</td>
</tr>
<tr>
<td>Health &amp; Wellness</td>
<td>17</td>
<td>8.3</td>
</tr>
<tr>
<td>Health Management</td>
<td>8</td>
<td>3.9</td>
</tr>
<tr>
<td>Geriatrics &amp; Gerontology</td>
<td>3</td>
<td>1.5</td>
</tr>
<tr>
<td>Medical Dietetics</td>
<td>14</td>
<td>6.8</td>
</tr>
<tr>
<td>Medical Technology</td>
<td>42</td>
<td>20.5</td>
</tr>
<tr>
<td>Radiologic Technology</td>
<td>23</td>
<td>11.2</td>
</tr>
<tr>
<td>Respiratory Therapy</td>
<td>14</td>
<td>6.8</td>
</tr>
<tr>
<td>Undecided</td>
<td>15</td>
<td>7.3</td>
</tr>
</tbody>
</table>

### Graduate Major

<table>
<thead>
<tr>
<th>Major</th>
<th>N</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intend to pursue graduate study in the Allied Medical Professions</td>
<td>125</td>
<td>60.9</td>
</tr>
<tr>
<td>Do not intend to pursue graduate study</td>
<td>80</td>
<td>39.0</td>
</tr>
</tbody>
</table>

If yes, area of graduate study

<table>
<thead>
<tr>
<th>Major</th>
<th>N</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master of Physical Therapy</td>
<td>70</td>
<td>34.1</td>
</tr>
<tr>
<td>Master of Occupational Therapy</td>
<td>6</td>
<td>2.9</td>
</tr>
<tr>
<td>Master of Science</td>
<td>22</td>
<td>10.7</td>
</tr>
<tr>
<td>Did not specify</td>
<td>27</td>
<td>13.2</td>
</tr>
</tbody>
</table>

N = 205

Table 4.2. Intended major

### DISTRIBUTION OF INDEPENDENT VARIABLES

The independent variables in the study were age, gender, experience with older adults, contact with older adults, attitude toward older adults, subjective norms, and
knowledge of aging. Table 4.3 reports the frequencies, means and standard deviations for the variables experience with older adults, contact with older adults.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean (SD)</th>
<th>Median</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experience with older adults</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worked with older adults</td>
<td>138</td>
<td>-</td>
<td>-</td>
<td>67.3</td>
</tr>
<tr>
<td>Have not worked with older adults</td>
<td>66</td>
<td>-</td>
<td>-</td>
<td>32.2</td>
</tr>
<tr>
<td>If yes, type of setting in which they</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>worked with older adults</td>
<td>43</td>
<td>-</td>
<td>-</td>
<td>21.0</td>
</tr>
<tr>
<td>Nursing home</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>4.9</td>
</tr>
<tr>
<td>Retirement community</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>3.4</td>
</tr>
<tr>
<td>Senior Center</td>
<td>78</td>
<td>-</td>
<td>-</td>
<td>38.0</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Contact with older adults</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had a close relationship</td>
<td>176</td>
<td>-</td>
<td>-</td>
<td>85.9</td>
</tr>
<tr>
<td>Did not have a close relationship</td>
<td>28</td>
<td>-</td>
<td>-</td>
<td>13.7</td>
</tr>
<tr>
<td>Age of oldest person lived with in</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>household</td>
<td>-</td>
<td>52.03(10.32)</td>
<td>50.00</td>
<td></td>
</tr>
<tr>
<td><strong>Subjective Norm</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rating of how much the decision to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>work with geriatric patients in your</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>professional career will depend on the</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>following: (1=not at all, 5 = strongly)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My Parents</td>
<td>-</td>
<td>2.96 (1.24)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Other Family members</td>
<td>-</td>
<td>2.83 (1.15)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>My Friends</td>
<td>-</td>
<td>2.21 (1.07)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Significant others (not related)</td>
<td>-</td>
<td>2.17 (1.08)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Total Subjective Norm Score</strong></td>
<td>-</td>
<td>10.17 (3.85)</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.3. Descriptive statistics for independent variables
DESCRIPTION OF DEPENDENT VARIABLE

The dependent variable was the allied health students’ intention to work with the older adult population after graduation. This was indicated by the participants’ response to the question asking them to indicate which age group of patients that they intend to work with upon graduation. Of the 205 participants participating in the study, only 7 (3.4%) indicated that they preferred to work with older adults (over age 65). Table 4.4 reports the frequencies and percentages for the dependent variable.

<table>
<thead>
<tr>
<th>Intended age group to work with after graduation</th>
<th>N</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric (under age 18)</td>
<td>82</td>
<td>40.2</td>
</tr>
<tr>
<td>Adult (18 – 64)</td>
<td>114</td>
<td>55.6</td>
</tr>
<tr>
<td>Older Adult (over age 65)</td>
<td>7</td>
<td>3.4</td>
</tr>
</tbody>
</table>

N = 203

Table 4.4. Intention to work with older adults after graduation

PARTICIPANTS’ KNOWLEDGE OF AGING

Research question 1a was: What is the level of pre-professional allied health students’ knowledge of aging? This was measured through the participants’ scores on the Facts on Aging Quiz (FAQ1). The 205 participants had a mean (SD) FAQ1 score of 15.22 (3.08). The FAQ1 has a possible score of 0 - 25. The study participants’ scored in the range of 5 – 22 on the instrument. A higher score on the FAQ1 indicates a higher level of knowledge on aging (Palmore, 1998). The participants’ mean score indicates that on average, they scored 60.88% of the items correctly. This reflects a relatively
low, yet average knowledge of aging, compared to other individuals of the same age and education level as the study participants (Palmore, 1998).

Research question 1b was: What is the difference in knowledge scores from the Facts on Aging Quiz between pre-professional allied health students who intend to work with older adults after graduation and those students who do not have an intention to work with older adults after graduation? The means on the FAQ1 did not differ. Effect size was calculated for differences between means with a Cohen’s d = 0.07. This reflects a negligible effect size (Cohen, 1988). Detailed results are presented in Table 4.5.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean FAQ1 Score</th>
<th>Std Deviation</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intend to work with older adults</td>
<td>7</td>
<td>15.42</td>
<td>2.22</td>
<td>0.07</td>
</tr>
<tr>
<td>Do not intend to work with older adults</td>
<td>198</td>
<td>15.22</td>
<td>3.10</td>
<td></td>
</tr>
<tr>
<td>N = 205</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.5. Difference in mean FAQ1 score between those who do and those that do not intend to work with older adults.
PARTICIPANTS’ ATTITUDES TOWARD AGING

Research question 2a was: What are the pre-professional allied health students’ attitudes toward older adults? The students’ scores on the Kogan’s Old People Scale (KOPS) measured attitudes. The 205 study participants had a mean (SD) score of 134.42 (16.77). The KOPS has a possible score of 34 – 204. A higher score on the instrument indicates a more positive attitude toward older adults (Kogan, 1961). A score of 102 is considered a neutral attitude toward older adults (Kearney, Miller, Paul & Smith, 2000). The pre-professional allied health students in the study scores ranged from 85 – 175. Their mean score of 134.42 reflects slightly more positive than neutral attitudes toward aging as measured by the KOPS instrument.

Question 2b was: What is the difference in attitude scores from the Kogan’s Old People Scale between pre-professional allied health students who intend to work with older adults after graduation and those students who do not have an intention to work with older adults after graduation? The means on the KOPS instrument did not differ. Effect size was calculated for differences between means with a Cohen’s $d = 0.24$. This reflects a small effect size (Cohen, 1988). Detailed results are presented in Table 4.6.
Table 4.6. Difference in mean KOPS score between those who do and those that do not intend to work with older adults.

RELATIONSHIPS BETWEEN PREDICTORS AND INTENTION

Research question 3 was: What is the correlation among various predictors (gender, experience working with older adults, subjective norms, knowledge and attitude), as well as intention to work with older adults? A total of six correlations were calculated to answer this research question. The first were point biserial correlations between subjective norms, attitude, knowledge and intention to work with older adults after graduation. The results are illustrated in Table 4.7. Knowledge and attitude produced low positive correlations (.013 and .035). Subjective norms were produced a low and negative correlation (-.029).

The next correlations performed were Phi correlations between gender & experience working with older adults and intention to work with older adults after graduation. The results were low and positive correlation coefficients (.065 and .015).
Table 4.7. Correlations Between Dependent Variable and Independent Variables.

PREDICTORS OF INTENTION

Research question 4 was: To what extent does the linear combination of age, gender, experience working with older adults, subjective norms, knowledge and attitude predict pre-professional allied health students’ intention to work with older adults after graduation? Research question 5 was: What is the unique and combined contribution of selected predictors in explaining variance in intention to work with older adults after graduation? Research question 6 was: Which predictors are most important is explaining the variance in pre-professional allied health students’ intention to work with older adults after graduation? These questions could not be addressed due to the low number of students (7) that indicated they would be interested in working with older adults after graduation. These findings support the need for further investigation into what factors contribute to intention toward working with older adults.
In addition, the study participants that were not intending to work with older adults were also examined closely with no significant findings. Conversely, careful consideration to the seven students that did intend to work with older adults could contribute important information to the allied health professions. The following section describes the seven participants that indicated intention to work with older adults after graduation and compares them to those not interested.

DESCRIPTION OF THOSE INTENDING TO WORK WITH OLDER ADULTS

Although the sample group had only 3.4% of the students interested in working with older adults after graduation, it is useful to examine those students in terms of their descriptive characteristics. The simple fact that such a small percentage of the pre-allied health students indicated intention to work with older adults further substantiates this investigation. In lieu of the planned logistic regression, the seven students that indicated intention to work with older adults after graduation will be examined in detail.

The seven students interested in working with older adults after graduation were largely female (85.7%), had a mean age of 18.28 years of age, all first year undergraduates and white (85.7%). Table 4.7 details their stated majors in the Allied Health Professions. An interesting finding was that of all students participating in the study, only three indicating their intended major was in Geriatrics and Gerontology. Two of these three individuals stated an intention to work with older adults after graduation, and one did not (this individual also indicated and intention to pursue graduate study in Physical Therapy).
Table 4.8. Intended majors of students intending to work with older adults.

This is an interesting finding, as one would expect an individual majoring in Geriatrics and Gerontology to intend to work with the elderly population following graduation.

The seven students with a positive intention to work with older adults also had a lower subjective norm score, indicating that they would be less influenced by other individuals (parents, friends, etc) in their decision to work with geriatric patients. Table 4.8 illustrates the differences in mean values for the main independent variables of attitude, knowledge and subjective norms. In addition, a comparison of the groups’ external independent variables of work experience and contact with older adults is also displayed in the table.

The group of students with intention to work with older adults after graduation also indicated that they had worked with older adults in some capacity and had close relationships with an older adult. An interesting finding was that six of the seven students answered that they had the age of the oldest adult they had lived with was in the
age range of 43 – 54, most likely a parent. Only one student had lived with an older adult, age 86, which was over the age of 65.

<table>
<thead>
<tr>
<th></th>
<th>Students with intention N = 7</th>
<th>Students without intention N = 198</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Age</td>
<td>18.28</td>
<td>18.32</td>
</tr>
<tr>
<td>Gender N(%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>6 (85.7)</td>
<td>137 (66.8)</td>
</tr>
<tr>
<td>Male</td>
<td>1 (14.3)</td>
<td>61 (29.8)</td>
</tr>
<tr>
<td>KOPS mean score</td>
<td>137.57</td>
<td>134.31</td>
</tr>
<tr>
<td>FAQ1 mean score</td>
<td>15.42</td>
<td>15.21</td>
</tr>
<tr>
<td>Experience with older adults N(%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worked with older adults</td>
<td>5 (71.4)</td>
<td>133 (64.9)</td>
</tr>
<tr>
<td>Have not worked with older adults</td>
<td>2 (28.6)</td>
<td>64 (32.5)</td>
</tr>
<tr>
<td>Contact with older adults N(%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had a close relationship</td>
<td>6 (85.7)</td>
<td>170 (82.9)</td>
</tr>
<tr>
<td>Did not have a close relationship</td>
<td>1 (14.3)</td>
<td>16 (7.8)</td>
</tr>
<tr>
<td>Mean age of oldest person lived in household (SD)</td>
<td>53 (14.9)</td>
<td>52 (10.1)</td>
</tr>
<tr>
<td>Subjective Norm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Subjective Norm Score</td>
<td>9.57</td>
<td>10.19</td>
</tr>
</tbody>
</table>

Table 4.9. Comparison of independent variables of those who do and do not intend to work with older adults after graduation.
Five of the seven students with the intention to work with older adults had experience working with older adults in a variety of settings, including nursing homes, retirement communities and senior centers. Four of the seven students indicated that they had worked with older adults in a variety of these settings. For example, two students indicated that they had worked with older adults in nursing homes and retirement communities. In summary, the group of seven students with the intention to work with the geriatric patient population reported similar levels of work experience, close contact, low knowledge of aging and a positive attitude toward aging, but were less influence by outside influences in their career choices.
SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

SUMMARY

The purpose of this study was to survey pre-professional allied health students' attitudes, knowledge and beliefs about working with older adults. The planned analysis was to determine which variables were useful in predicting intention to work with the older adult patient population. The dependent variable was the allied health students’ intention to work with the older adult population after graduation. The independent variables in the study were age, gender, experience with older adults, contact with older adults, attitude toward older adults, subjective norms, and knowledge of aging. Using Palmore’s Facts on Aging Quiz: Part 1 (FAQ1) and Kogan’s Old People Scale (KOPS), the survey also compared differences in knowledge level about aging and attitudes toward older adults based on intention to work with the older adult or not. In addition, participants were asked questions to reflect their subjective norms. External variables such as the participants’ age, gender, work experience with older adults and past relationships with older adults were also explored. However, due to the small number of students that indicated an intention to work with older adults (7), the logistic regression analysis was not performed. Therefore, in an exploratory manner, the students that did
indicate an intention to work with older adults after graduation were profiled and data provided were more descriptive in nature.

DESCRIPTION OF POPULATION

Data collection was gathered from students attending an introductory course at a large mid-western university. The students enrolled in the course were pre-professionals with an intention to enroll in one of eleven allied health professional programs. The data were collected at two different class meetings and all students present on those days chose to participate in the study. A total of 205 students responded to a survey distributed during their class time. The students were first-year undergraduates (96.6%), white (78.5%), and 18-years of age (71.7%). One hundred –forty-three (69.8%) of the study participants were female. The results and conclusions in this chapter are only applicable to students enrolled in the introductory course or limited accessible study population.

FINDINGS

The following will present a summary of the research findings as they relate to the research questions for the study.

1a. What is the level of pre-professional allied health students’ knowledge of aging?
1b. What is the difference in knowledge scores from the Facts on Aging Quiz between pre-professional allied health students who intend to work with older adults after graduation and those students who do not have an intention to work with older adults after graduation?
The participants’ scores reflect a limited knowledge of aging. According to Palmore, a higher score on the instrument indicates a higher level of knowledge of aging (Palmore, 1998). The FAQ1 has a possible score ranging from 0 to 25. The 205 students that participated in the study had a mean score (SD) on Facts on Aging Quiz (FAQ1) of 15.22 (3.08), which means that they answered, on average, 60.88% of the items correctly. The range for the study participants was 5 – 22 on the instrument. This is comparable to Palmore’s findings that those with a high school education typically score in the 52 – 60% range (Palmore, 1998). In studies of undergraduate students most comparable to the study population, the average FAQ1 scores ranged from 65 – 70% (Palmore, 1998). This suggests that the students participating in the study had below average knowledge of aging. This also suggests that study participants believe common myths and stereotypes about older adults and aging. This factor might have contributed to the low number of students that indicated an intention to work with geriatric patients after graduation.

Research question 1b investigated the differences of scores on FAQ1 between the students with an intention to work with older adults after graduation and those that did not. Unfortunately, in this population only 7 (3.4%) of the students indicated such an intention. There were no differences between the groups’ scores.

2a. What are the pre-professional allied health students’ attitudes toward older adults?
2b. What is the difference in attitude scores from the Kogan’s Old People Scale between pre-professional allied health students who intend to work with older adults after graduation and those students who do not have an intention to work with older adults after graduation?
The pre-AHP students had slightly positive attitudes toward aging. A score of 102 is considered a neutral attitude toward older adults (Kearney, Miller, Paul & Smith, 2000). A higher score on the instrument indicates a more positive attitude toward older adults. As measured by the Kogan’s Old People Scale (KOPS), the 205 study participants had a mean (SD) score of 134.42 (16.77). The KOPS has a possible score of 34 – 204. The pre-professional allied health students in the study scores ranged from 85 – 175. In another study examining pre-professional allied health students’ attitudes toward aging, mean KOPS scores were 112. In addition, in other studies of college students’ attitudes using other measures, attitudes were found to be either negative (Hawkins, 1996) or neutral (Funderburk, Damron-Rodriguez, Storms & Solomon, 2006). Therefore, the college students in this study had slightly more positive attitudes than other college students of the same age and education level.

Research question 2b investigated the differences of scores on KOPS between the students with an intention to work with older adults after graduation and those that did not. Unfortunately, in this population only 7 (3.4%) of the students indicated such an intention. There were no differences between the groups’ scores.

3. What is the correlation among various predictors (gender, experience working with older adults, subjective norms, knowledge and attitude), as well as intention to work with older adults?

Research question 3 examined correlations between independent variables and the dependent variable of intention to work with older adults after graduation. All correlation coefficients for this analysis resulted in low correlations with small effect
sizes. Results of these correlations might have been attenuated because of the shape of the distribution.

Research questions 4 through 6 could not be addressed due to the low number of students (7) that indicated they would be interested in working with older adults after graduation. Despite the disparity in the groups that did and did not intend to work with older adults, useful information regarding the predictors of intention can be described from the study findings. For example, a related finding from this inquiry was that most of the students participating (85.9%) indicated that they had a close relationship with an older adult, yet only 3.4% indicated an intention to work with that age group after graduation. The research literature is mixed regarding this as an influence on intention. Several studies have found conflicting findings regarding the influence of close relationships with an older adult and the individual’s intention (Cummings, Adler & DeCoster, 2005). In contrast, other research literature points out that individuals with close relationships to older relatives is a predisposition to the helping professions, but not specifically working with older adults. (Cummings, et al, 2005). Dunkle & Hyde (1995) found similar findings regarding close relationships when investigating the influences of physical therapy and nursing students toward working with older adults.

Additional information regarding the nature of the close relationships could provide useful information about the influence of these relationships to work or not to work with older adults after graduation. It is possible that these close relationships were with a sick older adult, with Alzheimer’s disease, for example. The close relationships might have also involved the individual experiencing deterioration of health or mental capacity. The individual might have also experienced the death of this loved one. If the
individual associates this close relationship with negative outcomes, their desire to work with the aging population might have been diminished.

The students participating in the study also indicated experience working with older adults in a variety of settings. Without additional information regarding the students’ perceptions of that work experience, it is difficult to say whether this might have negatively influenced their intentions. Given the age of the population studied, it is possible that their work experience might have been in a customer service capacity. Their experiences in these work environments might not have been positive and the work experience might have actually deterred them from an intention to work with the aging population in their healthcare careers.

CONCLUSIONS AND IMPLICATIONS

The conclusions and implications from this study are only applicable to the study population. The following are conclusions from this investigation:

1. Pre-AHP students in the study did not intend to work with older adults after graduation.

This is consistent with the literature reporting the lack of intention to work in geriatrics found in other studies of the health professions (Kaempfer, et al, 2002; Giles, Patterson, Butler& Stewart, 2002). Sadly, this lack of intention to work in geriatrics does little to solve the need for health professionals trained to work with the geriatric population, which will be increasing exponentially in the next thirty years. This will also be problematic as the students enter their professional programs. Although few pre-AHP students in the study intended to work with geriatric patients after they graduate, the fact is that many Allied Health Professionals (AHPs) cannot avoid older adults in clinical
practice. The nature of the Allied Health Professions at the undergraduate level of training does not often allow for specific specialization in aging. An AHP that selects to work in an acute care or community healthcare setting could conceivably treat patients of all age ranges. Because of the aging of the population, it is likely that very few future AHPs will practice in healthcare without treating elderly patients. Unless the AHP chooses a career in a pediatric healthcare facility, they are likely to treat elderly patients—especially in the coming years.

Study participants’ lack of intention to work with older adults suggests a disinterest in working with a patient population that they are most likely to treat often and at a high rate of contact. Research has shown that this disinterest, lack of knowledge or negative attitudes toward older patients has resulted in less aggressive healthcare treatment (Moriello, et al., 2005). In summary, the finding that pre-AHP students have a lack of intention to work with older adults has direct implications for the quality of care provided to the aging population in the future healthcare system.

2. Pre-AHP students in the study had below average knowledge of aging.

One possible explanation for the lack of intention to pursue a career working with geriatric patients might be the participants’ below average knowledge of aging as measured by the FAQ1. The FAQ1 includes 25 statements that have to be determined as true or false by the participant. Perhaps the reason the group scored low on the instrument is that they believe many of the myths and stereotypes regarding aging to be true. For example, only 53 (25.7%) students answered correctly on the false statement: “At least one tenth of the aged are living in long-stay institutions (such as nursing home, mental hospitals, home for the aged, etc).” The percentage of pre-AHP students that
answered incorrectly reflects a belief in the misconception that older adults live their lives institutionalized. The reality is that only 5% of older adults reside in long stay institutions at any one time (Palmore, 1998). This incorrect belief might have influenced their interpretation of what it means to work with the aging population. If they do not wish to work in a long-stay institution, such as a nursing home, the answer to the survey question regarding intention might have been influenced by the belief that working with older adults means working in this type of setting. The participants also scored poorly on other stereotype-related items. For example, 126 (61.2%) of the students answered incorrectly to the true statement: “Older workers have fewer accidents than younger workers.” Ninety-seven (47.1%) of the participants also answered incorrectly to the true statement: “The majority of old people say they are seldom irritated or angry.” Belief in these myths or stereotypes might have contributed to the pre-AHPs’ lack of intention to work with older adults.

Additionally, 148 (71.8%) of the pre-AHP students answered incorrectly to the true statement: “The majority of medical practitioners tend to give low priority to the aged.” The participants’ answer on this item suggests perhaps that they are not aware of the disparities in the healthcare of the elderly. Moreover, these young adults might not be aware of the projected needs for trained geriatric healthcare providers. Also pertaining to healthcare, 128 (62.1%) of the participants answered incorrectly to the false item: “The health and economic status of old people will be about the same or worse in the year 2010 (compared with younger people).” These items are especially interesting based on the misconceptions’ relevance to their lack of intention to work with older adults. Their agreement with the statement regarding the future health status of older adults suggests
they may perceive older adults as frail, ill and of declining health. This misconception might influence their decisions to avoid working with these patients in the future.

3. Pre-AHP students in the study intending to work with older adults were less influenced by subjective norms.

This study found that the pre-AHP students that did not intend to pursue geriatric practice had higher subjective norm scores indicating that they were more influenced by external opinion about geriatric practice than the students who planned to work with older adults. Subjective norms have been found to influence student behavior when considering behavioral intention to work with older adults (Dunkle & Hyde, 1995; Cummings, et al, 2005). This external influence as a determinant of the pre-AHP’s intention to work with the geriatric patient population deserves further investigation. Qualitative examination of the pre-AHP’s subjective norms would further provide information regarding the depth and reasoning behind such perceptions.

DISCUSSION OF THE THEORETICAL FRAMEWORK

Consistently, the research literature and the Theory of Reasoned Action posit the main independent variables of subjective norms, knowledge and attitudes to be determinants of behavior. The theoretical framework for the results of this study is illustrated by the changes to the study model (Figure 5.1). Although the statistical results of this study do not support this model by using the planned research methodology (due to the small number of individuals with intention to work with older adults), the findings of the study support subjective norms as possible contributors to the individuals’ lack of intention. The group of pre-AHP students in the study did not vary in terms of the external independent variables of gender, work experience with older adults and contact
with older adults. Meaningful differences between the students intending to work with older adults and those not intending to work with older adults are low. There could have been other variables accounting for the intention not investigated by this study. As mentioned previously, further investigation could further explain the influence of variables on the intention to work with geriatric patients.

LIMITATIONS

There were some limitations to this study. The primary limitation was that the sample for the study was limited to the students attending class on the day of data collection. Also, since the study population included only the students taking an introductory course at one educational institution, results are not generalizable to any other population.
A further limitation was that the statistical analysis planned to address the research questions were inappropriate due to the large difference in the sizes between the groups. The group of students indicating an intention to work with older adults only included seven study participants (3.4%). Although descriptive information about these seven students is explored, limited information was gathered to answer the research questions addressed in the study. Moreover, the homogeneity of the population studied was a limitation. The population did not vary by age, ethnicity or education level.

Finally, a limitation to the study was the manner in which a student’s intention to work with older adults was measured. The participants are asked to self-report their intention to work with older adults after graduation. While intention has been linked to behavior in the literature (Ajzen & Fishbein, 1980; Dunkle & Hyde, 1995), the study did not confirm the students’ actual career choice due to the limitation of time. The self-report of intention based on the questions asked may not have been an accurate representation of their actual behavior after graduation.

RECOMMENDATIONS AND FUTURE RESEARCH

There are several groups of individuals that could benefit from the exploratory information gleaned from this study. The following are recommendations and areas for further research.

First of all, there should be an effort to dispel the myths associated with aging in order to clear misconceptions before these pre-AHP students are at the patient’s bedside providing care. The pre-AHP students in the study were not asked if they had taken previous coursework in aging, but the assumption is that these first quarter Freshman students have had limited opportunity for such coursework. Taking a course on aging has
been found to increase knowledge and improve attitudes toward aging (Funderburk, et al., 2006). A recommendation would be to expose the pre-professional students to courses on adult development, communication, and the biology of aging prior to their admission into professional programs. This would improve their understanding of older adults, improve interactions with older patients and overall, perhaps provide increase the opportunity for positive experiences in the clinical setting. It is recommended that the allied health programs consider aging-related coursework as pre-requisites to admission.

Geriatric education should extend throughout their preparation as healthcare providers. Educators in the Allied Health Professions could use the results of this study as an impetus to incorporate more geriatric content into their curriculum. Once the AHPs enter their professional programs, they might become more interested in working with geriatric patients if they were better trained to do so during their academic preparation. Due to accreditation standards, several AHP educational programs are not required to include geriatric-related content, therefore there is little content related to geriatric healthcare. Curriculum standards often dictate the mere incorporation of geriatric content. For example, in Respiratory Therapy, the standards and guidelines list geriatrics as a guideline under the curriculum resources in the context of case management, home care, skilled nursing care, hospice, pulmonary rehabilitation and other specialty care areas. It is recommended that the incorporation of geriatric content become more deliberate and a necessary standard in Allied Health Professional programs. Also, programs should be held accountable for the inclusion of these educational components. A call to action is recommended for accrediting bodies that govern allied health curricula. The future of our nation’s older adults will rest in the care of these future allied healthcare providers.
There must be a push to bring these issues to the forefront in order to better prepare the healthcare workforce. The impending need for AHPs in the healthcare for older adults dictates that this become more of a priority from the standpoint of curriculum change. Learning about aging and how to treat older adults in the healthcare system should be viewed as a priority in preparing the best future healthcare providers possible.

There is also a need to extend the education regarding geriatric AHP preparation beyond the student and to the faculty as well. Sorenson, Shelledy, Jones and Morales (2006) surveyed Respiratory Therapy educational programs to examine whether they were offering geriatric content in their curriculum, if they viewed the content as important and whether they were interested in incorporating the content into their future curriculum. They found that the educational programs participating were teaching a little over 50% of the geriatric components in their curriculum. An interesting finding was that only 50% of the respondents were planning to incorporate geriatric content into existing courses and an additional 38.5% replied “maybe” about future incorporation of aging-related content (Sorenson, et al., 2006).

Educators in the Allied Health Professions with specific tracks of study like a Geriatric and Gerontology specialization could benefit from the exploratory information gathered from the study. From a practical standpoint, the findings from this study are cause for alarm and a call to take preventative action. Although the results of the study prohibited statistical analysis to determine the factors that predict intention to work with older adults, educators relying on student enrollment in these specialized tracks should regard the results with concern. Based on the results of this study, recruiting students to the specialization might be a challenge. Further qualitative examination of the pre-
AHP’s behavioral determinants could provide the AHP Educators with additional information to look closely at the reasons these students are not interested in working with geriatric patients after graduation. Furthermore, upon completion of AHP educational programs, these students will undoubtedly treat and interact with geriatric patients at some point. Further examination of the behavioral determinants could help to improve the educational training and the overall better preparation of geriatric-trained health care providers will increase the quality of care received by the future patients of these providers.

Another useful follow-up to this study would be to further investigate the pre-AHPs that were not intending to work with older adults after graduation. In the current study, 198 students indicated that they intended to work with another age group other than older adults, yet they also reported close relationships (82.9%) and experience working with older adults (64.9%). A better understanding of the nature of their experiences and whether they were negatively influenced by these experiences might be useful to gain a better understanding of why pre-AHP students do not wish to work with aging patients after graduation. One could speculate that although they have had close relationships with older adults, the nature of these relationships might have negatively influenced them to pursue working with the age group in a healthcare setting. These relationships might have involved Alzheimer’s disease, functional decline or death and might have a negative association in the students’ minds. One way to pursue additional information would be to conduct focus groups with the students not intending to work with geriatric patients in order to gain more qualitative information regarding the nature of this decision.
In conclusion, the nature of the pre-AHP student to not intend to work with older adults after graduation warrants further study. As we strive to increase the number of well-prepared practitioners, the variables influencing individuals to work or not work with the aging population will be integral in recruitment and preparation of the workforce. A qualitative examination of the reasons behind the decision to not work with the elderly population might provide professional programs with useful information in order to rectify and improve the perception of a career in geriatric Allied Health Professional practice.
LIST OF REFERENCES


APPENDIX A

KOGAN’S OLD PEOPLE SCALE
Attitudes Toward Old People Scale

By Nathan Kogan, PhD

The following statements express opinions with which you may or may not agree. Following each statement are six boxes. You are to indicate the degree to which you agree or disagree with each statement by checking the appropriate box. Please consider each statement carefully, but do not spend too much time on any one statement. DO NOT SKIP ANY ITEMS. There are no “right” or “wrong” answers. The only correct answers are those that are true to you. THIS INVENTORY IS BEING USED FOR RESEARCH PURPOSES ONLY AND IS COMPLETELY ANONYMOUS.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

1. It would probably be better if most old people lived in residential units with people their own age. 1 2 3 4 5 6

2. It would probably be better if most old people lived in residential units that also housed younger people. 1 2 3 4 5 6

3. There is something different about most old people; it’s hard to figure out what makes them tick. 1 2 3 4 5 6

4. Most old people are really no different from anybody else; they’re as easy to understand as younger people. 1 2 3 4 5 6

5. Most old people get set in their ways and are unable to change 1 2 3 4 5 6

6. Most old people are capable of new adjustments when the situation demands it. 1 2 3 4 5 6

7. Most old people would prefer to quit work as soon as pensions or their children can support them. 1 2 3 4 5 6

8. Most old people would prefer to continue working just as long as they possibly can rather than be dependent on anybody. 1 2 3 4 5 6

9. Most old people tend to let their homes become shabby and unattractive. 1 2 3 4 5 6
10. Most old people can generally be counted on to maintain a clean, attractive home.

11. It is foolish to claim that wisdom comes with age.

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

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

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

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

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

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

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

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

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

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

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

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

24. You can count on finding a nice residential neighborhood when there is a sizeable number of old people living in it.
25. There are a few exceptions, but in general most old people are pretty much alike.

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

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

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

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

30. Most old people are cheerful, agreeable, and good humored.

31. Most old people are constantly complaining about the behavior of the younger generation.

32. One seldom hears old people complaining about the behavior of the younger generation.

33. Most old people make excessive demands for love and reassurance than anyone else

34. Most old people need no more love and reassurance than anyone else

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APPENDIX B

FACTS ON AGING QUIZ: PART 1
The Facts on Aging Quiz: Part 1

By Erdman B. Palmore, PhD

Directions: Mark each of the following statements “True” or “False”

1. The majority of old people (age 65+) are senile (have defective memory, are disoriented, or demented).
   __ True  __ False

2. The five senses (sight, hearing, taste, touch and smell) all tend to weaken in old age.
   __ True  __ False

3. The majority of old people have no interest in, nor capacity for, sexual relations.
   __ True  __ False

4. Lung vital capacity tends to decline in old age.
   __ True  __ False

5. The majority of old people feel miserable most of the time.
   __ True  __ False

6. Physical strength tends to decline in old age.
   __ True  __ False

7. At least one tenth of the aged are living in long-stay institutions (such as nursing homes, mental hospitals, homes for the aged, etc).
   __ True  __ False

8. Aged drivers have fewer accidents per driver than those under the age of 65.
   __ True  __ False

9. Older workers usually cannot work as effectively as younger workers.
   __ True  __ False

10. Over three fourths of the aged are healthy enough to do their normal activities without help.
    __ True  __ False

11. The majority of old people are unable to adapt to change.
    __ True  __ False

12. Old people usually take longer to learn something new.
    __ True  __ False
13. Depression is more frequent among the elderly than among younger people. __ True __ False
14. Older people tend to react slower than younger people. __ True __ False
15. In general, old people tend to be pretty much alike. __ True __ False
16. The majority of old people say they are seldom bored. __ True __ False
17. The majority of old people are socially isolated. __ True __ False
18. Older workers have fewer accidents than younger workers. __ True __ False
19. Over 20% of the population are now age 65 and older. __ True __ False
20. The majority of medical practitioners tend to give low priority to the aged. __ True __ False
21. The majority of old people have incomes below the poverty line (as defined by the federal government). __ True __ False
22. The majority of old people are working or would like to have some kind of work to do (including housework and volunteer work). __ True __ False
23. Old people tend to become more religious as they age. __ True __ False
24. The majority of old people say they are seldom irritated or angry. __ True __ False
25. The health and economic status of old people will be about the same or worse in the year 2010 (compared with younger people). __ True __ False

APPENDIX C

KNOWLEDGE, BEHAVIORS AND ATTITUDES OF PRE-ALLIED HEALTH STUDENTS
Knowledge, Behaviors, and Attitudes of Pre-Allied Health Students

Directions: Please complete the following survey as truthfully as possible. Your responses are confidential – only the researchers will see your responses. Thank you for participating in this research project.

GENERAL INFORMATION:

1. How old are you? __________ years

2. What is your gender?
   _____ Female
   _____ Male

3. What year are you in school?
   _____ 1st year undergraduate
   _____ 2nd year undergraduate
   _____ 3rd year undergraduate
   _____ 4th year undergraduate
   _____ 5th year or more undergraduate

4. How do you usually describe yourself? Please mark all that apply.
   _____ White (not Hispanic)
   _____ Black (not Hispanic)
   _____ Hispanic or Latino
   _____ Asian or Pacific Islander
   _____ American Indian or Alaskan Native
   _____ Other

5. Are you an international student?
   _____ Yes
   _____ No
6. What is your intended undergraduate major (please pick one)?
   ______ Athletic Training
   ______ Circulation Technology
   ______ Health Information Management and Systems
   ______ Health Sciences
   ______ Health and Wellness
   ______ Health Management
   ______ Geriatrics and Gerontology
   ______ Medical Dietetics
   ______ Medical Technology
   ______ Radiologic Technology
   ______ Respiratory Therapy
   ______ undecided

7. Do you intend to pursue graduate education in the Allied Medical Professions?
   ______ yes
   ______ no

   If yes, what area do you intend to pursue?
   ______ Master of Physical Therapy
   ______ Master of Occupational Therapy
   ______ Master of Science
   ______ not applicable

8. After you graduate, what age group you would prefer to work with?
   ______ pediatric (under age 18)
   ______ adult (18 – 64)
   ______ older adult (over age 65)

9. What is the age of the oldest person you have lived with in your household?
   ______ years

10. Have you ever had a close relationship with an older adult (for example, a grandparent or family friend)?
    ______ yes
    ______ no
11. Have you ever worked with older adults (over the age of 65) in a job or volunteer opportunity?
   ______ yes
   ______ no

12. If yes, in what type of setting did you work with them?
   ______ Nursing home
   ______ Retirement community
   ______ Senior Center
   ______ Other ________________________
   ______ Not applicable

13. How much would your decision to work with geriatric patients in your professional career depend on the following individuals?

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<th>Not at all</th>
<th>Rather not</th>
<th>Indifferent</th>
<th>Somewhat</th>
<th>Strongly</th>
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<tr>
<td>Other family members</td>
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<td>(grandparents, aunts,</td>
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<td>uncles, etc)</td>
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<td>My friends</td>
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<td>that are not related</td>
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<td>to me (clergy, teachers,</td>
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<td>etc)</td>
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APPENDIX D

PERMISSION LETTER FROM DR. KOGAN
Dear Ms. Sergakis:

You have my permission to use my OP Scale in your proposed research project. Please feel free to contact me again if you have any questions regarding the administration or scoring of the scale. You have my best wishes for the success of your project, and I would be pleased to learn of the outcomes upon its completion.

Sincerely,
Nathan Kogan, PhD
Professor of Psychology
New School for Social Research
APPENDIX E

PERMISSION LETTER FROM SPRINGER PUBLISHING
Dear Ms. Serkis,

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Doctoral Dissertation: "Knowledge. Attitude & Beliefs About Aging..."
Georgianna G. Serkakis, The Ohio State University; June 2006

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