A Descriptive Study of Exercise Science Students’ Knowledge of, and Attitudes Toward, Older Adults

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Abstract

Today, there is greater need for health professionals to help older adults maintain function and remain independent. Negative attitudes towards older adults have been found in undergraduate students, with men having more negative attitudes compared to women (Allan & Johnson, 2008; Callahan, 2011). To our knowledge, the attitudes of Exercise Science students have not been examined. The aim of this study was to describe Exercise Science students’ knowledge of aging and attitudes towards older adults. Participants (N=76) completed Fabroni's Scale of Ageism and Palmore's Facts on Aging Quiz. The participants scored an average of 15.4 (SD= 2.4) on the PAQ, and 79.4 (SD= 7.9) on the FSA, and there was no correlation between aging knowledge and attitudes. Results suggest Exercise Science students have a low level of aging knowledge and exhibited low levels of ageism, with no difference between males and females. Exercise Science curriculums should continue to improve educational strategies to prepare students for working with older adults.

Introduction

The Administration on Aging (2009) projects that by 2030, older adults (persons 65 and older) will represent 19% of the population. Along with the demographic shift, there is an increase in chronic disease among Americans. Currently, there are 133 million people living with one or more chronic diseases, such as heart disease, diabetes, or cancer (Anderson, 2004). As older adults age, these chronic diseases frequently cause them to lose function and their independence, putting a large burden on the U.S. healthcare system. As the population grows older, there will be a greater need for health professionals to help older adults maintain function and remain independent. However, many health professionals today are less willing to work with older adults, communicate with them differently than younger adults, and hold preconceived notions of older adults (Hultgren, 2012). For example, researchers at John Hopkins University School of Medicine, found 80% of students would aggressively treat pneumonia in a 10 year old girl, but only 56% would do so for an 85 year old woman (Currey, 2008).

Ageism, or "the discrimination against an individual based on their age", is prevalent throughout the healthcare system (Angus & Reeve, 2006). When it comes to older adults, the current healthcare system focuses on disease management rather than prevention. This form of ageism is not only hurting the older adult community, but is further burdening the United States healthcare system. A RAND (Research and Development organization) Study examining health information technology systems projected savings of $81 million or more with aggressive
preventative strategies as opposed to treatments and disease management. (Taylor, Bower, Girosi, Bigelow, Fonkych & Hillestad, 2005) The average expenditure of health care spent on an older adult per year was $11,089, which is significantly higher compared to the amount spent on middle and younger aged adults, which was $3,352 per year (Stanton & Rutherford, 2005).

In health care situations, older adults are faced with longer hospital stays, complex health issues, difficult pain management, and less external support than younger adults (Sorrell, 2010). This unique set of issues brings about a need for increased empathy and quality interpersonal relations between health care providers and older adult consumers (Sorrell, 2010). The specific skill set needed to work with the older adult community cannot be obtained if students are fostering ageist attitudes in their undergraduate careers. To begin to change the healthcare culture, and reduce the costs and effects of ageism, there is a need for better education in medical and allied health students’ undergraduate careers.

Negative attitudes towards older adults have been found in undergraduate students across a wide range of disciplines, with men having more negative attitudes compared to women (Allan & Johnson, 2008; Callahan, 2011). It’s possible age discrimination begins early in the health professional’s training, as most medical and health students have not had opportunities to interact with older adults. A lack of contact, or contact that is of poor quality, can result in negative attitudes toward a certain group of people, based largely on unfair stereotypes (Pettigrew, 1998). Previous research has shown that interactions with the stigmatized group can reduce prejudice and improve attitudes (Hultgren, 2012). In a study conducted with dental students, increased clinical experience and interaction with older adults resulted in improved knowledge and awareness of aging (Fabiano, Waldrop, Nochajski, Davis, & Goldberg, 2005). Stuart-Hamilton & Mahoney researched the effects of aging awareness training on the knowledge of, and attitudes towards, older adults, the researchers found their sample showed greater understanding of aging was associated with more positive attitudes towards older adults (Stuart-Hamilton & Mahoney, 2003). From the study’s result, it can be inferred that negative attitudes are rooted in a lack of knowledge about adulthood and aging.

To our knowledge, the attitudes of Exercise Science students towards older adults has not been examined. Many Exercise Science students are preparing for careers in physical education, health and medicine, physical/occupational therapy programs, biology, or sport science. For example, clinical exercise physiologists most often work in rehabilitation settings helping patients with cardiovascular disease who are largely over the age of 60 (ACSM, 2012). Exercise Science students are also likely to become fitness instructors. As the older adult community continues to grow, there will be a higher demand for fitness programs designed to address the functional fitness needs specific to this age group. It is imperative to the health and wellness of older adults that our Exercise Science curriculums are training students to design exercise programs specific to their changing needs, as well as have a commitment to improving the quality of geriatric care. Therefore, the aim of this study was to describe Exercise Science students’ knowledge of aging and attitudes towards older adults. A secondary aim of our study
was to compare attitudes of Exercise Science students to students from other medical and allied health disciplines.

**Methods**

Before conducting the study, the researchers obtained approval from the University's Internal Review Board. Participants were recruited on the first day of the Spring 2014 semester by one of the researchers who visited each class and asked for volunteers to complete the questionnaires. A total of 76 students (33 men and 43 women) were recruited from four undergraduate Exercise Science courses. The majority of students identified as Caucasian and between the ages of 20-24 years. These courses were chosen to be representative of both lower and upper level classes offered at WKU.

The participants completed an 1) informed consent, 2) a demographic questionnaire, 3) Palmore's Facts on Aging Quiz (PAQ), and 4) the Fabroni Scale of Ageism (FSA). Paper and pencil questionnaire packets were distributed to each class. The researcher obtained informed consent from each participant. The participants were told the purpose of the study was to collect data for Southern Association of Colleges and Schools (SACS) accreditation.

The FSA was used to measure the participants’ attitudes toward older adults, specifically in the realm of ageism (Fabroni, et al., 1990). The participants were asked to respond how strongly they agreed or disagreed with the given statement on a 4-point Likert scale (1= strongly disagree to 4= strongly agree), resulting in a range of scores between 29 and 116, with higher scores indicating stronger ageist attitudes. A neutral score for the measure would be 72.5. An alpha coefficient of .86 was reported for the scale, showing a high internal consistency for the FSA.

The PAQ, was used to assess participants’ knowledge of aging (Palmore, 1990). The quiz format was true or false, comprised of 25 items designed to cover a wide range of physical, mental, and social facts most commonly misperceived about older adults. A point was given to each correct answer on the quiz, with scores ranging from 0-25. This measure has been shown to be a valid and reliable measure of knowledge of aging (Fraboni, et al., 1990).

The data were analyzed utilizing the Statistical Package for the Social Sciences (SPSS), softwares. For both the PAQ and FSA, the responses were coded numerically. The FSA was scored on a 4-point Likert scale. The PAQ had response choices of true or false, and scores were determined by the number of correct responses.

**Results**

The participants scored an average of 15.4 (SD = 2.4) on the PAQ. Scores ranged from a minimum of 10 to a maximum of 20. The participants scored an average of 79.4 (SD = 7.9) on the FSA. Scores ranged from a minimum of 58 to a maximum of 90. There was not a statistically significant difference between
men ($M = 79.79$) and women ($M = 79.09$), $t(74) = .71, p > .05$. There was not a significant correlation between aging knowledge and attitudes towards older adults, $r(74) = -.199, p > .05$.

**Discussion**

The low level of aging knowledge in our sample was not surprising. Many Exercise Science students have not had many opportunities to engage with older adults or participate in gerontology curriculum. Our results are most closely related to studies done with medical and dental students (Carmel, et al., 2006, Waldrop, et al., 2008), but participants did outperform nursing students (Carmel, et al., 2006). Allan, et al. (2009) conducted a descriptive study of aging knowledge using the PAQ. The undergraduates scored an average of 11.92, indicative of a low level of aging knowledge that was related to higher levels of ageism. The researchers also tested for aging anxiety, which turned out to be a mediating factor. The students with more aging knowledge tended to be less anxious and had less ageist attitudes. Previous studies have done well with testing students before and after participation in an aging course (Allan, et al., 2009; Cottle & Glover, 2007; Stuart-Hamilton, et al., 2003), but there is a gap in studies measuring changes in knowledge and attitudes after a course involving quality interpersonal contact with older adults. Aging anxiety could have been an underlying factor in our study, future researchers should consider this mediator.

To our knowledge, the FSA has not been used to measure attitudes in medical and allied health students. Our results do not align with previous research because we did not find a difference in ageism between men and women. The moderately low score on the FSA from the current study could have been a result of the measure having very explicit statements. In a study done by Lin, et al. (2011), explicit attitudes were shown to be slightly more positive than implicit ones. This finding aligns with the social desirability effect which can influence a participant's responses because of social and political pressure and context (Lin, et al., 2011). The participants taking the questionnaire were able to clearly see which statements were positively and negatively coded, such as "Old people deserve the same rights and privileges as other members of our society" (positive), and "Most old people would be considered to have poor personal hygiene" (negative). These statements only capture the explicit attitudes of the participants, not the implicit ones.

Though they were very simple to administer, the FSA was developed in 1990, and the PAQ was developed in 1977, making them outdated measures. Since then, the base of knowledge on aging and adulthood has changed drastically and future researchers should consider developing a more advanced measures of knowledge and attitudes. The Implicit Association Test (Greenwald, Mccrhee, & Schwartz, 1998) is a way to further study attitudes toward older adults without the social pressure of being politically correct on an explicit measure.

Institute for the Ages (2014) states that for the next 40 years, the fastest growing segment of the population will be over 80 years old, and it's not just in America. Internationally, 40% of the population in the developed world will be over 55 years of age. These demographic shifts call for medical and allied health professionals with a base of aging knowledge and a positive regard for working with older adults. Our sample of Exercise Science students performed at the similar levels as other medical and allied health students on aging knowledge. (See Table 1) The low level of knowledge shown in the study could cause
Exercise Science students to regress in their attitudes towards older adults, and would harm our healthcare system as it adjusts to the growing older adult consumer population. Exercise Science curriculum shouldn’t stop at incorporating Gerontology concepts into course framework, but also engage students in interactions with older adults. If given the opportunity to serve or work with older adults, students may find a new life in the field of Gerontology. In the future, Exercise Science faculty should foster quality contact between students and older adults, aging knowledge and attitudes towards older adults could improve significantly.

Conclusion

Looking forward, one of the best ways to ensure positive affect toward older adults for Exercise Science students is to engage them in a service-learning course. Beling (2008) showed the greatest increase in aging knowledge from pre to post-tests came from the physical therapy service-learning students, compared to other teaching pedagogies. Intergenerational service-learning is a pedagogy used to link students with older people in the community (Underwood & Dorfman, 2006). Service-learning gives students the opportunity to apply the course concepts and skills outside of the classroom, while providing service to the community (Dorfman, et al., 2004). Service-learning is considered a "high impact" practice, and has been shown to greatly enhance academic development in undergraduate collegians because of its integration of theoretical concepts and real-life experience. (Boswell & Swaner, 2009)

In conclusion, Exercise Science students showed a low level of aging knowledge, but also a low level of ageism. In the future, Exercise Science curriculums should continue to make strides in improving educational strategies to prepare students for working with a growing older adult population.
References


### Table 1: PAQ results for medical and allied health students

<table>
<thead>
<tr>
<th>Author</th>
<th>Type of Student</th>
<th>PAQ M (sd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beling, et al. (2008)</td>
<td>Physical Therapy</td>
<td>16.87 (2.5)</td>
</tr>
<tr>
<td>Carmel, et al. (2006)</td>
<td>Medical</td>
<td>15.19 (7.9)</td>
</tr>
<tr>
<td>Carmel, et al. (2006)</td>
<td>Nursing</td>
<td>13.75 (8.82)</td>
</tr>
<tr>
<td>Fabiano, et al. (2005)</td>
<td>Dental</td>
<td>14.21 (2.03)</td>
</tr>
<tr>
<td>Lusk, et al. (1995)</td>
<td>Nursing</td>
<td>17.57 (2.34)</td>
</tr>
<tr>
<td>Waldrop, et al. (2008)*</td>
<td>Dental</td>
<td>15.03 (2.67)</td>
</tr>
</tbody>
</table>

*The original study was conducted with four cohorts, but were averaged together for comparison.*