

2022

Cohort Analysis of Four Graduating Classes of Occupational Therapy Students' Knowledge of Aging

LaVona Traywick
Arkansas Colleges of Health Education

Brittany N. Saviers
University of Central Arkansas

Terry Wayne Griffin
Kansas State University

Teresa Brown
Arkansas Colleges of Health Education

Follow this and additional works at: <https://encompass.eku.edu/jote>



Part of the [Gerontology Commons](#), [Occupational Therapy Commons](#), and the [Scholarship of Teaching and Learning Commons](#)

Recommended Citation

Traywick, L., Saviers, B. N., Griffin, T. W., & Brown, T. (2022). Cohort Analysis of Four Graduating Classes of Occupational Therapy Students' Knowledge of Aging. *Journal of Occupational Therapy Education*, 6 (2). <https://doi.org/10.26681/jote.2022.060208>

This Original Research is brought to you for free and open access by the Journals at Encompass. It has been accepted for inclusion in Journal of Occupational Therapy Education by an authorized editor of Encompass. For more information, please contact Linda.Sizemore@eku.edu.

Cohort Analysis of Four Graduating Classes of Occupational Therapy Students' Knowledge of Aging

Abstract

At the same time that the number of senior adults in the United States is steadily rising, there is also a rising shortage of allied health care professionals, including occupational therapists, to meet the current and expected needs of the senior adult population. There are national standards that all occupational therapy programs must meet; however, there is not a set national curriculum. It is assumed that students will enter their respective occupational therapy programs with a base knowledge of aging due to prerequisite requirements. To test that assumption, with Institutional Review Board approval, over four consecutive years 192 first-year, first-semester occupational therapy students were administered the *Facts on Aging Quiz* along with additional questions regarding year of birth and anticipated employment. Results showed that first-year occupational therapy students' knowledge of aging was poor (67.9% mean) regardless of their age or population work preference. Most students stated that pediatrics—only 11.5% stated geriatrics—was their preferred population with which to work. Statistical tests indicated a trend of decreasing mean scores of the cohorts. If this trend of decreasing gerontological literacy exists in occupational therapy, other health care disciplines may be experiencing similar fates. Health care education should meet the needs of society and it appears there may be a significant gap that needs to be addressed to prepare health care practitioners to best meet the needs of the current population. Based on these study results, more emphasis needs to be placed on gerontological literacy for new occupational therapy students.

Keywords

Knowledge of aging, occupational therapy, geriatrics, OT education

Creative Commons License



This work is licensed under a [Creative Commons Attribution-Noncommercial-No Derivative Works 4.0 License](https://creativecommons.org/licenses/by-nc-nd/4.0/).

JOTE

Journal of Occupational
Therapy Education

Volume 6, Issue 2

Cohort Analysis of Four Graduating Classes of Occupational Therapy Students' Knowledge of Aging

LaVona Traywick, PhD

Brittany Saviers, PhD, OTR/L

Terry Griffin, PhD

Teressa Brown, PhD, DPT, PT

Arkansas Colleges of Health Education

United States

ABSTRACT

At the same time that the number of senior adults in the United States is steadily rising, there is also a rising shortage of allied health care professionals, including occupational therapists, to meet the current and expected needs of the senior adult population. There are national standards that all occupational therapy programs must meet; however, there is not a set national curriculum. It is assumed that students will enter their respective occupational therapy programs with a base knowledge of aging due to prerequisite requirements. To test that assumption, with Institutional Review Board approval, over four consecutive years 192 first-year, first-semester occupational therapy students were administered the *Facts on Aging Quiz* along with additional questions regarding year of birth and anticipated employment. Results showed that first-year occupational therapy students' knowledge of aging was poor (67.9% mean) regardless of their age or population work preference. Most students stated that pediatrics—only 11.5% stated geriatrics—was their preferred population with which to work. Statistical tests indicated a trend of decreasing mean scores of the cohorts. If this trend of decreasing gerontological literacy exists in occupational therapy, other health care disciplines may be experiencing similar fates. Health care education should meet the needs of society and it appears there may be a significant gap that needs to be addressed to prepare health care practitioners to best meet the needs of the current population. Based on these study results, more emphasis needs to be placed on gerontological literacy for new occupational therapy students.

Introduction

At the same time the number of senior adults in the United States is steadily rising, there is also a shortage of allied health professionals, including occupational therapists, to meet the current or expected needs of the senior adult population (Eldercare Workforce Alliance, 2015). According to the United States Census Bureau (2019), the senior adult population in 2019 composed 16.5% of the population in the United States and is expected to increase to 22.0% by 2050. Data from the National Ambulatory Medical Care Survey (Ashman et al., 2015) found the rate for medical office visits of senior adults aged 65 and over was more than twice the rate for adults aged 18–64 and children under age 18 years. The current literature supports the increasing need for health care professionals to work with the aging population.

Occupational therapists are well suited to address all aspects of aging including functional independence, wellness and prevention, and client safety (American Occupational Therapy Association [AOTA], 2020a). In fact, productive aging has been identified as a key practice area by AOTA (2017). AOTA has identified several factors that will increase the need for occupational therapy services in this area, including a rapidly aging population, increased longevity, and increased focus on quality-of-life issues (AOTA, 2020b).

Occupational therapy programs must be accredited by the Accreditation Council for Occupational Therapy Education (ACOTE®). While all programs must show that they meet the ACOTE (2018) standards, each program has the autonomy to achieve those standards in its own way. Absence of standardized curricula results in wide variation in gerontological literacy training. Programs may have standalone courses in aging, while other programs may thread the information in courses throughout the curriculum, making a focus on aging less explicit. Regardless of curricular design, the researchers assume many programs have an overreliance on students' baseline level of knowledge about aging prior to entry into the occupational therapy program. The purpose of this study was to determine first-year, first-semester occupational therapy students' knowledge of aging as they entered a professional graduate program and assess the need for explicit curricular focus on gerontological literacy requirements in occupational therapy programs. It was hypothesized that older non-traditional students and students who self-selected as desiring to work with senior adult populations would have a greater knowledge of aging than their classmates.

Literature Review

A strong focus on geriatric education in occupational therapy is necessary as providing effective treatment for the older population requires a unique and complex knowledge base. Limited gerontological training in many health care disciplines suggests that health professionals are inadequately prepared to address the needs of the older adult population (Bardach & Rowles, 2012). In 1986, Schneider and Williams called for an increased focus on geriatric education across the health professions to ensure “sufficient numbers of persons will be trained to provide for the future needs of our aging population” (p. 434). They noted several barriers to increasing geriatric

knowledge such as lack of curricula, limited appropriately trained educators, lack of incentives for such training, and limited interest from students (Schneider & Williams, 1986). Sadly, 25 years later, Bardach and Rowles (2012) found little had improved as the result of the continuing presence of barriers identified decades ago.

In 2012, Bardach and Rowles examined geriatric content of seven health disciplines (medicine, nursing, pharmacy, dentistry, physician assistant studies, physical therapy, and communications disorders) to examine the contemporary status of geriatric education. In physical therapy education, perhaps the most similar to occupational therapy in the disciplines examined in this study, there has been a long-standing recognition in focusing on the care of older adults. Akin to occupational therapy, physical therapy education requires specific evidence of geriatric content being covered as part of the accreditation process (Commission on Accreditation in Physical Therapy Education, 2016). However, despite this requirement, the authors found that only 10% of physical therapy programs offered a formal geriatric course (Bardach & Rowles, 2012). A separate study about physical therapy found that of the 209,000 licensed physical therapists in the United States in 2019, only 1.2% had completed sufficient training to be Geriatric Certified Specialists (Shubert & Henage, 2020). The authors cited the dramatic demographic shift in the population and growing segment of older adults that will require all physical therapists to have foundational knowledge of evidence-based management of older adults. Similar studies specifically looking at geriatric content in occupational therapy programs or the specific training for occupational therapists for this practice environment are lacking in occupational therapy literature.

An additional barrier to student knowledge related to aging is a limited focus on geriatrics in published research. A study (Pearl et al., 2014) reviewed publications across several prominent occupational therapy journals from around the world, including the *American Journal of Occupational Therapy*, during a five-year period (2006-2010). The authors found that only 7% of articles focused on geriatric content (Pearl et al., 2014). While this finding was fairly consistent across the Canadian (8%) and British (5%) occupational therapy journals, Scandinavian and Australian journals were found to have 15% of their published articles focused on geriatric content (Pearl et al., 2014).

Engagement with older adults during education may have an impact on student interest in geriatrics. A pilot study out of Duke University assessed the impact of an eight-week curriculum for physical therapy students integrating key concepts of rehabilitation for older adults (Shubert & Henage, 2020). The authors found that students had an increased understanding and increased confidence in working with older adults. Furthermore, they noted students who had no prior interest in geriatrics preceding the course were more confident in their abilities and more interested in caring for older adults following course completion (Shubert & Henage, 2020).

Occupational therapy programs need to have an intentional focus on the infusion of geriatric content into the curriculum and course design to ensure all students have sufficient knowledge and skills to treat the aging population. This study serves as an important step in informing geriatric curricular content—including fieldwork placement—in occupational therapy education by establishing a baseline of students' knowledge of aging and the older adult.

Methods

Institutional Review Board (IRB) approval (UCA#16-161) was granted to assess occupational therapy students' knowledge on aging related issues. First-semester, first-year students in the University's occupational therapy graduating classes of 2018, 2020, 2021, and 2022 were invited to be the subjects of the cohort analysis study. The standard of this occupational therapy program is to refer to each class by their graduating cohort and not year of admission. Due to a change in the curriculum from an entry-level Master of Science program to an entry-level clinical doctorate program there was not a graduating cohort of 2019.

Palmore's *Facts on Aging Quiz* was selected as the assessment instrument. This assessment tool was first published in *The Gerontologist* in 1977 by Erdman Palmore (1977) and has since been used by gerontologists as a measurement instrument for knowledge of aging. The *Facts on Aging Quiz* was revised in 2015 (Breytspraak & Badura, 2015) and the first wave of data collection began in 2016. Thus, this assessment tool was considered the most relevant by the researchers. The 50 true/false quiz questions were assigned to four unequal subsets of common topics by the researchers: 1) 11 questions assigned to knowledge of statistics (statKnow), 12 assigned to normal aging (normalAging), 15 to psychological social (psychoSocial), and 12 questions assigned to health (health). These subsets were created as previous research did not support a multifactor structure (Davis et al., 2019). The subsets for this study were created based on content analysis of the quiz questions. For example, question 37 "Older adults (65+) have higher rates of criminal victimization than adults under 65 do (Breytspraak & Badura, 2015)," is a statistical knowledge question categorized as statKnow, whereas question 39 "Older adults (65+) are more fearful of crime than are persons under 65 (Breytspraak & Badura, 2015)" is asking about the psychological state of the older adults--fearful--and is categorized as psychoSocial. Even though both questions are about crime, the focus of the questions differ as one is a knowledge of facts and the other is understanding how older adults feel/think/act.

Additional questions were added to the survey regarding demographic information and intentions of each student-respondent including year of birth, gender, self-identified as traditional or nontraditional student, and desired population to work with post-graduation. Desired population to work with was selected from a dropdown list of choices including "All," "Undecided," "Pediatrics," "Geriatrics," "Adult," and "Specific Population." Specific Population included types of employment opportunities, such as working in an acute rehabilitation setting or the Veterans Affairs. The question regarding target population was asked to test the hypothesis that students who desired to work with older adults would have differing initial knowledge levels than their classmates.

Data Acquisition

Quizzes were administered during the first semester in the first two weeks of class to determine students' knowledge of aging during the Fall of 2016, 2017, 2018 and 2019. The informed consent letter preceded the survey questions for voluntary participation in the study. The survey instrument was deployed online via Qualtrics software version XM (Qualtrics, Provo, UT). Data extracts from Qualtrics online survey software were downloaded as comma separated values (*.csv) for each graduating class. Each of the four cohort *.csv files were read into R (R Core Team, 2021) using the read.csv function. The four cohort datasets were combined into a single dataset using the rbind function to combine by row.

Defining Data Variables

Continuous and categorical variables were available for analysis. Continuous variables included quiz scores. Categorical variables included birth year, population of interest, expected graduating cohort year, gender, non-traditional, and generation based on student's birth year as defined by Pew Research Service (Dimock, 2019). Generation X students were born between 1965 and 1980, millennials between 1981 and 1996, and Generation Z born after 1996.

Analysis and Results

Descriptive Statistics

Across all four graduating cohorts, 192 students completed the quiz. Each class consisted of 48 or 49 students; however, one student-respondent did not participate such that the cohort of 2021 had a 98% response rate. Hence the sample size for the 2021 cohort is only 47; otherwise, response rate was 100% for the remaining cohorts. Ninety-one percent of the participants were female. In each graduating cohort, up to seven students self-identified as being non-traditional with 11% overall. The majority of students were considered members of the millennial generation (86.4%) followed by Generation Z with 12.5%. The remaining 1% of students were from Generation X. See Table 1: Number of students by gender, graduating class and generation.

Table 1*Number of Students by Gender, Graduating Class, Gender, and Generation*

	2018		2020		2021		2022		Total		Total
	M	F	M	F	M	F	M	F	M	F	
Generation X	0	1	0	0	0	1	0	0	0	2	2
Millennial	5	42	4	45	4	39	2	25	15	151	166
Generation Z	0	0	0	0	0	3	2	19	2	22	24
Total	5	43	4	45	4	43	4	44	17	175	192
Total	48		49		47		48		192		

Of the 192 participants, most students reported a desire to work with the pediatric population (n=67,35%). The second most common response was “Undecided” at 28% (n=53). “Geriatrics” and “All age groups” were similar at 11.5% (n=22) and 12.5% (n=24), respectively. Adult population represented 7% (n=14) and “Specific Population” was chosen by 6% (n=12) of students. See Table 2: Sample size (proportion) of students by graduating class and target population for work.

Table 2

Sample Size (Proportion) of Students by Graduating Class and Target Population for Work (n=192)

	2018	2020	2021	2022	Total
Adult	4 (0.02)	4 (0.02)	2 (0.01)	4 (0.02)	14 (0.07)
All age groups	5 (0.03)	6 (0.03)	6 (0.03)	7 (0.04)	24 (0.06)
Geriatric	9 (0.05)	1 (0.01)	6 (0.03)	6 (0.03)	22 (0.11)
Pediatric	16 (0.08)	21 (0.11)	17 (0.09)	13 (0.07)	67 (0.35)
Specific Population	5 (0.03)	1 (0.01)	5 (0.03)	1 (0.01)	12 (0.06)
Undecided	9 (0.05)	16 (0.08)	11 (0.06)	17 (0.09)	53 (0.28)
Total	48 (0.25)	49 (0.26)	47 (0.24)	48 (0.25)	192 (1.00)

Individual quiz questions were evaluated. Across all 50 questions, the average and median correct response rate was 67.9% and 68%, respectively. Question 30 on social security benefits had the lowest correct response rate at 9.9%. Question 36 on lack of similarity of older adults had the highest correct response rate of 97.4%.

Mean scores across graduating cohorts ranged from 65.2% by cohort of 2022 to 68.8% by cohort of 2021. See Figure 1: Boxplot of quiz scores by graduating cohort.

Multiple comparisons of means (Montgomery, 2019; Tukey, 1949) were conducted on each set of appropriate data using the TukeyHSD function in R (Miller, 1981; Yandell, 1997). Welch two sample t-tests for unequal variances were conducted on percent correct responses for the four subsets of questions using the t-test function in R. See Table 3: Descriptive statistics for question subsets, sample size and percentage correct.

Figure 1

Boxplot of Quiz Scores by Graduating Cohort

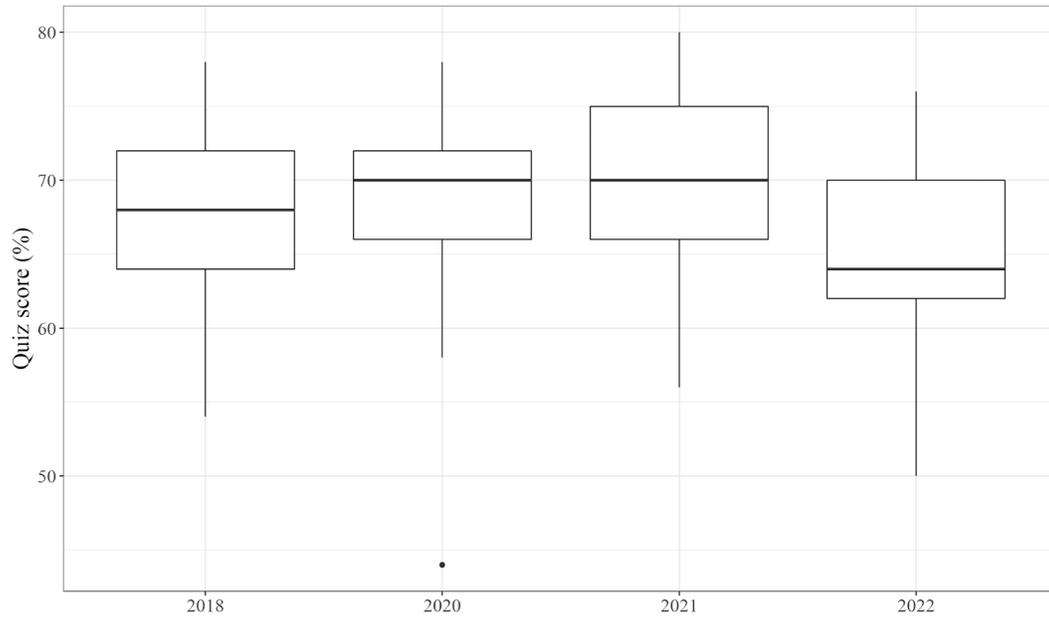


Table 3

Descriptive Statistics for Question Subsets, Sample Size and Percentage Correct

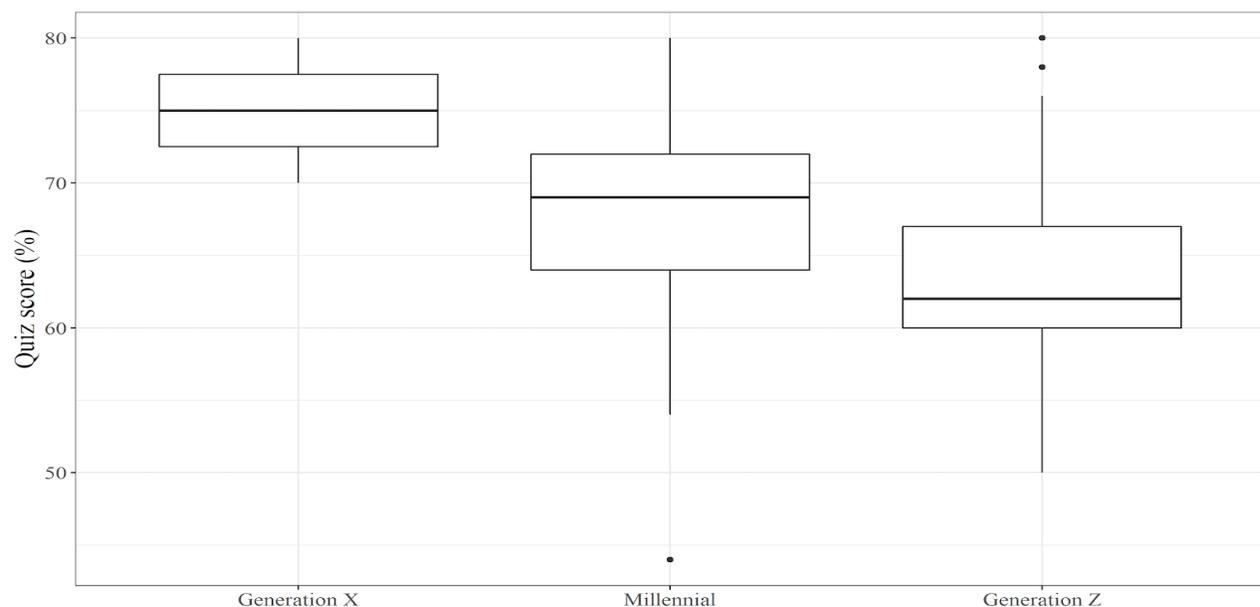
	n	Mean (%)	sd	min	max
statKnow	11	55	12	0	91
normalAging	12	75	14	17	100
psycho/social	15	67	14	27	93
health	12	74	11	42	100

Exploratory Analysis

Statistical tests indicated that the graduating cohort of 2022 had slightly lower mean scores than the previous three cohorts. Differences in quiz scores were detected among students assigned to generational categories of “Generation X,” “Millennial,” and “Generation Z.” Although no significant difference was detected between the older two generations, Generation X and millennials had higher mean quiz scores than Generation Z at the 10% and 5% level, respectively. See Figure 2: Boxplot of quiz scores by generational attributes. Results of scores by graduating cohort and generation may have been convoluted given that the majority of Generation Z students were in the graduating cohort of 2022.

Figure 2

Boxplot of Quiz Scores by Generational Attributes



Students were assigned to subgroups based on their self-selected target population of interest. See Figure 3: Number of students by generation and population of interest. No differences in quiz scores were detected at any conventional significance level for any pairwise comparisons. See Figure 4: Boxplot of quiz scores by desired target population.

Figure 3

Number of Students by Generation and Population of Interest

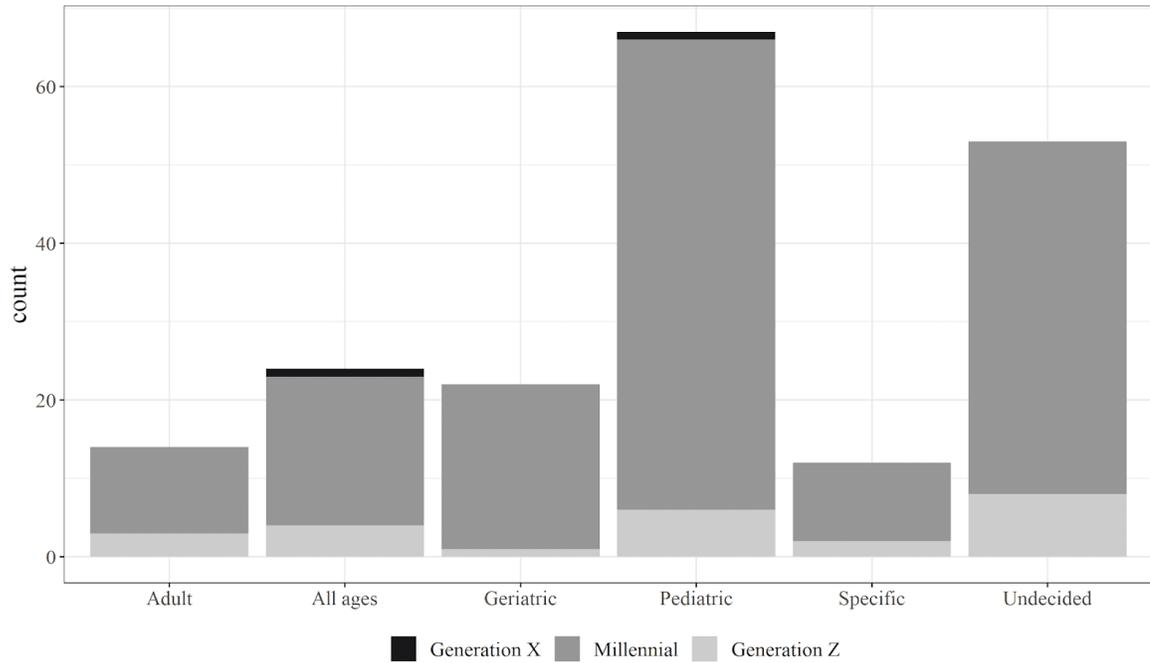
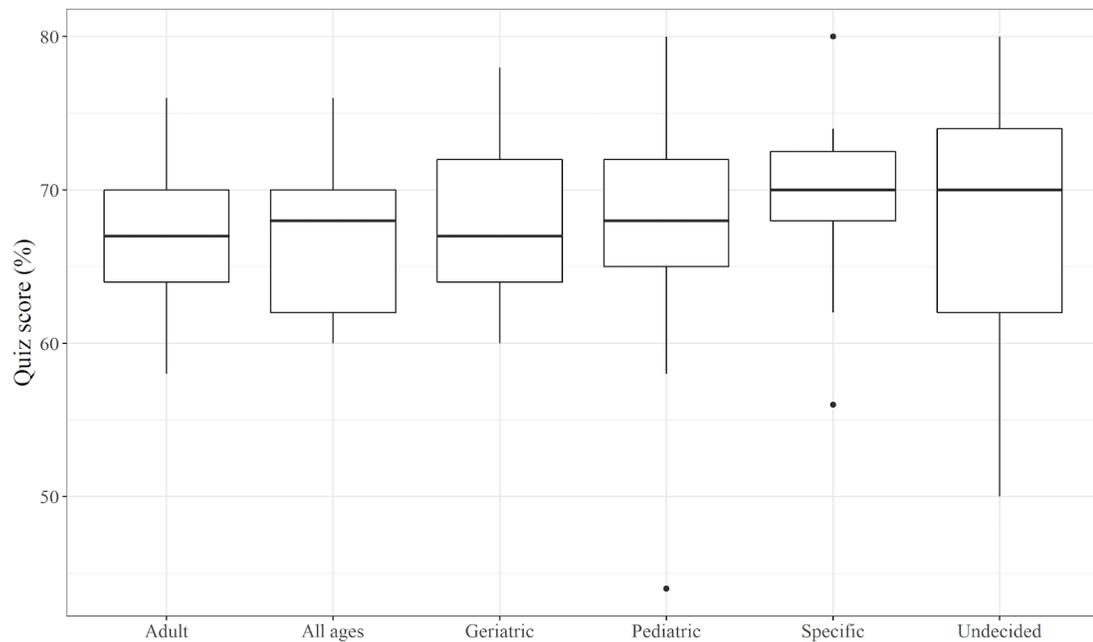


Figure 4

Boxplot of Quiz Scores by Desired Target Population



Analysis of Questions by Subgroups

Regarding the four subgroups of knowledge of statistics (statKnow), normal aging (normalAging), psychological/social (psychoSocial), and health (health), students responded to statKnow questions with statistically lower mean correct (55%, see Table 4: Welch Two Sample t-test for difference of means in unequal variances) than for the other three subsets of questions. Responses to psychoSocial questions were correct 67% of the time and statistically higher than for statKnow and statistically lower than the means for normalAging and health. See Table 5: Welch Two Sample t-test for difference of means in unequal variances. NormalAging and health questions had statistically higher (p-value <0.0001) mean correct responses than for statKnow and psychoSocial. No statistical differences in the percent correct responses between questions related to normalAging and health were detected; the mean percent correct responses were statistically significant for all other pairwise comparisons (see Table 4).

Table 4

Welch Two Sample T-Test for Difference of Means in Unequal Variances

	normalAging	psycho/social	health
statKnow	<0.0001	<0.0001	<0.0001
normalAging		<0.0001	0.4971
psycho/social			<0.0001

Based on *a priori* experience with classroom performance, it was hypothesized that self-selection for the population of interest would correspond to different scores on a subset of quiz questions. Categorical student groupings (Gender, Specific Population, Class, Generation) were tested against each other for percent correct responses for each subset of questions. No statistical difference was detected for a subset of questions for the four populations of interest groups at any conventional significance level. Although the initial hypothesis was rejected for each population of interest, other substantial differences in subsets were detected.

Subsets of questions were evaluated by cohort. For statKnow, the cohort of 2021 had higher correct responses to the quiz than the cohort of 2022 ($p=0.022$). For normalAging, the cohort of 2018 had higher correct responses than the cohort of 2021 ($p<0.01$). For psychoSocial, the cohort of 2021 had higher percent correct responses than the cohort of 2018 ($p=0.049$) and cohort of 2022 ($p<0.01$). The class of 2021 had significantly higher percent correct responses than the cohort of 2022 for health-related questions ($p<0.01$). All other combinations of graduating cohorts and subset of questions were not different at any conventional significance level.

Subsets of questions were evaluated by the students' generation. Generation Z had lower percent correct responses for a subset of health questions than Generation X ($p=0.094$) and millennial ($p<0.001$). No significant differences in test scores were detected for remaining subsets of questions across generations. Likewise, students self-identifying as non-traditional students had significantly higher quiz scores for the health-related questions than traditional students ($p<0.01$). For the statKnow questions, female students had statistically higher quiz scores ($p<0.01$) than male students. Students from both genders performed similarly on the three remaining subsets of questions.

Discussion

Descriptive Statistics

Knowledge of senior adults was poor, regardless of students' preferred population, year of birth, generation, or gender. Undergraduate and graduate college students scoring poorly on the Facts on Aging Quiz has been cited in the literature with various professions, not just occupational therapy students (Allen et al., 2021; Davis & Zechner, 2019; Ghimire et al., 2019; Intrieri & Kurth, 2018; Lun, 2021; Zhan et al., 2021). With the study data collection taking place within the first two weeks of class, it is assumed that the study participants will increase their knowledge of aging as they move through the curriculum. However, knowledge gain is not enough to influence changes in attitudes towards senior adults. A previous study by Carmel et al. (1992) showed that increasing knowledge alone as indicated by students' scores on Palmore's Facts on Aging Quiz was not enough to change attitudes about aging or the desire to work with the senior adult population.

The participants were asked "What is your preferred population to work with upon graduation?" but no differences in quiz scores by self-selected target population were detected. The students were not asked why they preferred a particular population, but the descriptive statistic became somewhat concerning as so few (11.5%) surveyed wanted to work with the geriatric population; the majority (35%) surveyed reported a desire to work with the pediatric population. On a national scale, the AOTA 2015 Salary & Workforce Survey found that for recent graduates the majority stated that long-term care or skilled nursing facility (LTC/SNF) was their first choice (28.8%) for a practice setting (AOTA, 2015, p.14). While this question was about a practice setting and not a population, most of the population at these locations are senior adults. Juxtaposed to the previously mentioned research by Carmel et al. (1992), if knowledge gain is not enough for change in desire to work with the senior adult population, then curriculum that allows for interactions with senior adults could be the factor behind the change in attitude. The occupational therapy student fieldwork experience has been recognized as a critical influence on occupational therapy students when choosing future practice areas with which to work (Chiang et al., 2013; Crowe & Mackenzie, 2002; Patterson & D'Amico, 2020).

Exploratory Analysis

The cohort of 2022 had lower mean scores than the previous three cohorts. The cohort of 2022 also had the most Generation Z students. What is concerning is that there is a decreasing trend in mean test scores with each successive generation. Even though not using generations, Caskie et al. (2019) reported in their study that young adults have lower knowledge of aging than middle aged adults based on the Facts on Aging Quiz as well as having a more negative bias towards aging. With each generation being less knowledgeable about aging, there is significant concern for continued and increasing lack of occupational therapists who desire to work with older adults. The same AOTA (2015) survey that identified LTC/SNF as the preferred practice setting for the majority of recent graduates also identified LTC/SNF as the most stated location of employment for those who did *not* receive job offers in their first or second choice in practice setting (AOTA, 2015).

Analysis of Questions by Subgroup

Student-respondents were all entering a health-related field, occupational therapy, so it is understandable that scores on aspects of normal aging and health would be higher than the other two subset categories. One concerning result is the significantly lower mean scores for the psychoSocial subset of questions. Mental health is a growing concern for all Americans. Knowledge of how to treat patients across the lifespan with psychosocial issues influencing occupational performance is crucial, even if not working primarily in a mental health setting. AOTA has “identified mental health as a key practice area in the 21st century” (AOTA, 2021, para 1.) as well as placed an emphasis on students' awareness of psychosocial factors of the person as indicated in the 2018 accreditation standards for occupational therapy education that require all fieldwork experiences to include a psychosocial course objective (ACOTE, 2018). These efforts are needed as the AOTA 2015 Salary & Workforce Survey showed a decrease in the percentage of American occupational therapists working in mental health from 5.2% in 2000 to 2.4% in 2015 (Armstrong, 2020). Mental health is part of aging health, consequently, curriculums need to be intentional in teaching the skillset needed to navigate through the aging and mental health process.

Limitations

Limitations of this study include a lack of diversity in the study population. The students in the Occupational Therapy Department where the study was conducted were 97% white; given the relatively homogenous demographics of the occupational therapy student-subjects, categories regarding race were not collected nor considered in this analysis. The results showed interesting findings regarding students' knowledge of the mental aspects of aging (psychoSocial), yet, for the population of interest “mental health” was not specified as an option. The study was also completed on one discipline and may not be generalizable to other disciplines of graduate study. Another limitation is the lack of research on subcategories of the *Facts on Aging Quiz*. Fifty questions are numerous to run individual statistical comparison on and would show little meaning.

Future Research

While this study has demonstrated that knowledge of incoming students around gerontological literacy is poor, future studies should be conducted to assess outgoing knowledge and performance on the *Facts on Aging Quiz*. In addition, it would be of benefit to include multiple institutions in this study, both those with embedded and explicit gerontological course work to assess differences in knowledge and student perceptions across the two curricula. Furthermore, future studies should look at the current status of additional health care programs. If this trend of poor and decreasing gerontological literacy exists in occupational therapy, other health care disciplines may be experiencing similar fates. Health care education should meet the needs of society and it appears there may be a significant gap that needs to be addressed to prepare health care practitioners to best meet the needs of the current population.

Implications for Occupational Therapy Education

Despite the increasing need, there is a growing shortage of occupational therapists working with the senior adult population (Eldercare Workforce Alliance, 2015). This study illuminates some troubling trends that could cause this gap to widen; incoming occupational therapy students are entering graduate programs with poor knowledge of senior adults, limited desire to work with this population, and each generation is becoming further removed from the senior population. This concerning trend influences how health care providers and educational programs need to address the holistic needs of the aging population (Ashman et al., 2015; Centers for Disease Control and Prevention, 2013; Eldercare Workforce Alliance, 2015). Previous scholars have found a positive relationship between the willingness to work with this population and educational opportunities, occupational therapy gerontology education, as well as positive experiences with older adults (Horowitz et al., 2014; Shubert & Henage, 2020). Similarly, the results of this study offer broad considerations for occupational therapy education and future practice in regard to entry-level occupational therapy curriculum design that includes an intentional focus on facilitating students' knowledge of aging as well as students' attitude, and interest to work with senior adults as future practitioners.

Due to results of this study indicating poor knowledge of aging in occupational therapy students and lack of desire to work with the aging population, professional curriculum should be enhanced by placing more emphasis in gerontological literacy, lifespan development, and life course theory in occupational therapy students' coursework through purposeful curriculum and course design. Often topics such as human development are taught as foundational knowledge that the student is expected to know prior to entry into the occupational therapy program. This can be a missed opportunity for students to connect concepts related to the senior adult population to daily occupation while understanding how the content relates to the philosophy and practice of occupational therapy. Utilizing a subject-centered educational approach (Hooper, 2010; Palmer, 1998) could help to infuse educational experiences with occupational beings at different life stages, especially older adults, into all types of coursework.

As experiential learning opportunities and service-learning are an integral component of occupational therapy education (ACOTE, 2018), one way to incorporate these experiences could be through hands-on learning with the well-elderly population. Utilizing the well-elderly population could allow for learning experiences to be designed that facilitate opportunities for students to observe, interact, and practice clinical skills with this population. Additionally, as previous literature has indicated the influence of fieldwork experiences on the choice of future practice areas with which to work for occupational therapy students (Chiang et al., 2013; Crowe & Mackenzie, 2002), occupational therapy programs should attempt to ensure fieldwork experiences are available with the senior adult population to maximize student opportunities for positive experiences with this population and potentially positively influence their desire to work with older adults.

Fieldwork educators should be made aware of the significant aspects of the fieldwork experience that students find most influential in their future practice. This also includes informing the fieldwork educator of the indirect role they play in recruiting new graduates into their areas of practice by shaping student views about their future in occupational therapy. This could be done through professional development for fieldwork educators provided by the occupational therapy program or through more formal certification training venues such as AOTA's Fieldwork Educator Certification Workshop. To facilitate positive aspects of fieldwork supervision, the Academic Fieldwork Coordinator could also implement strategies to facilitate communication, collaboration, and constructive feedback through requirements such as a weekly or bi-weekly communication form that is completed together by the fieldwork educator and student and then reviewed by the Academic Fieldwork Coordinator. This form could facilitate communication on goals met, future goals for upcoming weeks, appropriateness of supervision, and other types of constructive feedback to the fieldwork process.

Conclusion

This study demonstrates several important factors that need to be explored. Although the study participants were considered well educated when entering the program as inclusion into occupational therapy programs nationally is competitive; overall, the students still scored poorly on the *Facts on Aging Quiz*. This demonstrates poor incoming knowledge of the geriatric population. Having a higher score on the quiz—an increase in the knowledge of aging compared to their cohort—did not influence their choice of preferred population with which to work. Non-traditional and older students were also not a factor in quiz scores or preferred population to work. Graduates must not only know facts about aging, but they must also have the desire to work with the aging population to meet the current demand in the health care industry. Of perhaps greater concern, there appears to be a trend in gerontological literacy decreasing with younger generations. One could conclude that as society is aging and the need for health care providers to elevate understanding and care of this population, incoming

students are arriving to graduate programs with less preparation in working with these patients. These factors demonstrate a need for occupational therapy programs to have explicit courses, learning content, and exposure through fieldwork or service-learning intentionally embedded within the curriculum to address this gap and help facilitate student interest within this population.

References

- Accreditation Council for Occupational Therapy Education. (2018). 2018 Accreditation Council for Occupational Therapy Education (ACOTE®) standards and interpretive guide (effective July 31, 2020). *American Journal of Occupational Therapy*, 72. <https://doi.org/10.5014/ajot.2018.72S217>
- Allen, T., Mayo, P., Koshman, S., Gray, M., Babar, A., & Sadowski, C. A. (2021). Clinical pharmacists' knowledge of and attitudes toward older adults. *Pharmacy*, 9(4), 172. <https://doi.org/10.3390/pharmacy9040172>
- American Occupational Therapy Association. (2020a). AOTA Professionals Productive Aging. Retrieved September 16, 2020 from <https://www.aota.org/About-Occupational-Therapy/Professionals/PA.aspx>
- American Occupational Therapy Association. (2020b). AOTA Practice Productive Aging. Retrieved September 16, 2020 from <https://www.aota.org/Practice/Productive-Aging.aspx>
- American Occupational Therapy Association. (2021). AOTA Practice Mental Health. Retrieved October 8, 2021 from <https://www.aota.org/Practice/Mental-Health.aspx>
- American Occupational Therapy Association. (2015). 2015 AOTA Salary & Workforce Survey Executive Summary. Retrieved December 15, 2021 from <https://www.aota.org/-/media/Corporate/Files/Secure/Educations-Careers/Salary-Survey/2015-AOTA-Workforce-Salary-Survey-HIGH-RES.pdf>
- American Occupational Therapy Association. (2017). Vision 2025. *American Journal of Occupational Therapy*, 71, 1. <https://doi.org/10.5014/ajot.2017.713002>
- Armstrong, M. (2020, May). *Occupational Therapy Practice in Community Mental Health: Four Case Examples*. Retrieved December 16, 2021 from <https://www.aota.org/Education-Careers/Students/Pulse/Archive/career-advice/community-mental-health.aspx>
- Ashman, J., Hing, E., & Talwalkar, A. (2015, September). *Variation in Physician Office Visit Rates by Patient Characteristics and State, 2012: NCHS Data Brief No. 212, September 2015*. Retrieved September 16, 2020 from <http://www.cdc.gov/nchs/data/databriefs/db212.htm>
- Bardach, M. A., & Rowles, G. (2012). Geriatric education in the health professions: Are we making progress? *The Gerontologist*, 52(5), 607-618. <https://doi.org/10.1093/geront/gns006>
- Breyspraak, L., & Badura, L. (2015). *Facts on Aging Quiz (revised; based on Palmore (1977;1981))*. Retrieved from <http://info.umkc.edu/aging/quiz/>
- Carmel, S., Cwikel, J., & Galinsky, D. (1992). Changes in knowledge, attitudes, and work preferences following courses in gerontology among medical, nursing, and social work students. *Educational Gerontology*, 18(4), 329-342. <https://doi.org/10.1080/0360127920180403>

- Caskie, G., Canell, A. E., & Bashian, H. M. (2019). Knowledge of aging, negative age bias, and positive age bias: Age group differences. *Innovation in Aging*, 3(Suppl 1), S80–S81. <https://doi.org/10.1093/geroni/igz038.312>
- Centers for Disease Control and Prevention. (2013). *The state of aging and health in America*. Retrieved from <http://www.cdc.gov/aging/pdf/state-aging-health-inamerica-2013.pdf>
- Chiang, HY., Liu, CH., Chen, Y., Wang, SH., Lin, WS., Su, FY., Su, CT., Pan, CH., & Wang, CA. (2013). A survey of how occupational therapy fieldwork influences future professional preference. *Hong Kong Journal of Occupational Therapy*, 23, 62-68. <https://doi.org/10.1016/j.hkjot.2013.09.003>
- Crowe, M. J., & Mackenzie, L. (2002). The influence of fieldwork on the preferred future practice areas of final year occupational therapy students. *Australian Occupational Therapy Journal*, 49, 25-36. <https://doi.org/10.1046/j.0045-0766.2001.00276.x>
- Commission on Accreditation in Physical Therapy Education. (2016). *Physical Therapy Standards and Required Elements*. Retrieved from <https://www.capteonline.org/globalassets/capte-docs/capte-pt-standards-required-elements.pdf>
- Davis, J., Breytspraak, L., Marszalek, J., & McDows, J. (2019). Disentangling knowledge and bias: Combating ageism with the revised Facts on Aging Quiz. *Innovation in Aging*, 3 (Suppl 1). <https://doi.org/10.1093/geroni/igz038.1703>
- Davis, T., & Zechner, M. (2019). Undergraduate exercise and aging students knowledge and perceptions regarding older adults. *Innovation in Aging*, 3(Suppl 1), S536. <https://doi.org/10.1093/geroni/igz038.1970>
- Dimock, M. (2019). *Defining generations: "Where Millennials end and Generation Z begins."* Pew Research Center. Retrieved January 17, 2019 from <https://www.pewresearch.org/fact-tank/2019/01/17/where-millennials-end-and-generation-z-begins/>
- Eldercare Workforce Alliance. (2015). *Geriatrics workforce shortage: A looming crisis for our families*. Retrieved from <https://eldercareworkforce.org/research/issue-briefs/research:geriatrics-workforce-shortage-a-looming-crisis-for-our-families>
- Ghimire, S., Shrestha, N., Callahan, K. E., Nath, D., Baral, B. K., Lekhak, N., & Singh, D. R. (2019). Undergraduate nursing students' knowledge of aging, attitudes toward and perceptions of working with older adults in Kathmandu Nepal. *International Journal of Nursing Sciences*, 6(2), 204-210. <https://doi.org/10.1016/j.ijnss.2019.03.003>
- Hooper, B. (2010). On arriving at the destination of the Centennial Vision: Navigational landmarks to guide occupational therapy education. *Occupational Therapy in Health Care*, 24, 97-106. <https://doi.org/10.3109/07380570903329636>
- Horowitz, B., Tagliarino, J., & Look, K. (2014). Occupational therapy education, attitudes on aging, and occupational therapy students and therapists' interests in gerontology practice. *Gerontology and Geriatrics Education*, 31, 75-91. <https://doi.org/10.1080/270196090357845>
- Intrieri, R. C., & Kurth, M. L. (2018). Racial differences in attitudes toward aging, aging knowledge, and contact. *Educational Gerontology*, 44(1), 40-53. <https://doi.org/10.1080/03601277.2017.1388962>

- Lun, M. W. (2021). The impact of gerontological education on students' knowledge of aging and career preferences. *College Student Journal*, 55(3), 243-248.
- Miller, R. G. (1981). *Simultaneous statistical inference* (2nd ed.). Springer.
- Montgomery, D. C. (2019). *Design and analysis of experiments* (10th ed.). Wiley.
- Palmer, P. J. (1998). *The courage to teach: Exploring the inner landscape of a teacher's life*. Jossey-Bass.
- Palmore, E. (1977). Facts on Aging: A short quiz. *The Gerontologist*, 17(4), p. 315-320. <https://doi.org/10.1093/geront/17.4.315>
- Patterson, B., & D'Amico, M. (2020). What does the evidence say about student, fieldwork educator, and new occupational therapy practitioner perceptions of successful level II fieldwork and transition to practice? A scoping review. *Journal of Occupational Therapy Education*, 4(2). <https://doi.org/10.26681/jote.2020.040210>
- Pearl, A., Brennan, A., Journey, K., & McPherson, J. (2014). Content analysis of five occupational therapy journals 2006-2010: Further review of characteristics of the quantitative literature. *American Journal of Occupational Therapy*, 68(4), 115-123. <https://doi.org/10.5014/ajot.2014.009704>
- R Core Team. (2021). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. Retrieved from <https://www.R-project.org/>
- Schneider, E. L., & Williams, T. F. (1986). Geriatrics and gerontology: Imperatives in education and training. *Annual of Internal Medicine*, 104(3), 432-435. <https://doi.org/10.7326/0003-4819-104-3-432>
- Shubert, T., & Henage, C. (2020). Want to engage more physical therapy students in geriatrics? Teach the 4Ms. *Innovation in Aging*, 4 (Suppl 1), 14-15 [Abstract].
- Tukey, J. (1949). Comparing individual means in the analysis of variance. *Biometrics*, 5(2), 99-114. <https://doi.org/10.2307/3001913>
- United States Census Bureau. (2019). *Quick facts United States*. Retrieved from <https://www.census.gov/quickfacts/fact/table/US/PST045219>
- Yandell, B. S. (1997). *Practical data analysis for designed experiments*. Chapman & Hall.
- Zhan, G., Pearcey, S., & Tomioka, H. (2021). A cross-cultural examination of college students' knowledge of aging and their experiences with older adults: China, Japan, and the United States. *Educational Gerontology*, 47(10), 447-462. <https://doi.org/10.1080/03601277.2021.1993540>