

# Dental Hygiene Students' Perceptions of Older Adults

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*Abstract:* Geriatric education is an important component of the dental hygiene curriculum because, in it, students acquire skills and attitudes to help provide quality care to older adults. The purpose of this study was to determine if off-site exposure to nursing home residents with supervised oversight had the potential to improve dental hygiene students' attitudes toward older adults. Senior dental hygiene students at one school completed a pre-nursing home experience questionnaire. A series of geriatric lectures and discussions, which included discussions about students' anxieties of working with institutionalized older adults, were held prior to the nursing home experience. The students then participated in two supervised four-hour nursing home experiences, were debriefed after the experiences, and completed a second questionnaire. Of thirty-nine potential participants in the study, thirty-two took part in the pre-nursing home experience questionnaire (82.1 percent). They had a mean split Fabroni score of 34.2 (95 percent confidence interval: 32.2, 36.3). The thirty participants in the post-experience questionnaire (76.9 percent of total) had a mean split score of 32.7 (95 percent confidence interval: 30.1, 35.3). This study failed to reject the null hypothesis of no mean difference between the pre- and post-nursing home experience; however, the post-experience mean score was lower than the pre-nursing home experience mean score, indicating a more positive attitude toward older adults after the experience.

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The demographics of the U.S. population are rapidly changing, with trends projected for a higher percentage of older adults in the near future.<sup>1</sup> There were 40.3 million (13 percent) people over age sixty-five years in 2010, an increase of 15.1 percent over the 35.0 million (12 percent) in 2000. A surge of growth in the older population is expected with the aging of people forty-five to sixty-four years of age. The cohort born between mid-1946 and 1964 (post-World War II) is one of the largest generations in U.S. history.<sup>1</sup>

The older adult population has many health care needs. Residents of nursing homes or in assisted living situations often require help with activities of daily living, including their self-health care. Daily oral infection control (toothbrushing and flossing) is one such need. Older adults living in nursing homes or assisted living are more likely to require assistance with daily oral infection control than community-dwelling older adults. However, provision of oral infection control in nursing homes and assisted living remains problematic. One study found that only 16 percent of nursing home residents who needed

assistance with oral infection control received care and, of those who did receive care, the average time a resident's teeth were brushed was a mere 16.2 seconds.<sup>2</sup>

Dental hygiene students and early career dental hygienists are primarily eighteen to twenty-four years of age, a cohort that demographers call the Millennial or Y generation.<sup>3-6</sup> There are generational differences between the Millennial and older adult cohorts that have the potential to impact health care delivery and acceptance. The Millennial cohort has been described, for example, as more heterogeneous, more ethnically and culturally diverse, more politically progressive, and less religiously observant than older adults.<sup>4</sup> Many young people do not have active contact with older adults, particularly older adults living in nursing homes or assisted living. There have been significant changes in the structure of families, family sizes, location of housing, and the dispersion of family members, resulting in young people often having little contact with older family members or other older adults.<sup>7</sup> Young professionals who have had little contact with older adults may have con-

cerns about working with older adults, particularly in unfamiliar institutional settings.<sup>7</sup>

Dental hygiene students are required to receive an education that addresses the needs of individuals across the lifespan. The typical education and professional experience has been the treatment of patients in an operatory setting, either in a dental school or private practice. With the growing number of older adults needing institutionalized care, dental hygienists will face unique challenges in helping meet their patients' needs in nursing home or assisted living settings, including needing to become comfortable working with people from a different generation with potentially different perspectives. A concern voiced in the United Kingdom was having professionals capable and willing to provide quality care to older adults living in long-term care.<sup>8</sup> In the United States, the 2010 Elder Justice Act had a similar goal of having professionals capable and willing to provide quality care.<sup>8</sup> However, there are barriers to reaching that goal, and ageism is one such barrier.

Ageism is prejudice and discrimination based on a person's age.<sup>9</sup> Employers with twenty or more employees engaged in industries involving commerce across state lines are not permitted to discriminate based on age under the provisions of the 1967 Age Discrimination in Employment Act unless age is a bona fide occupational qualification and is reasonably necessary for the operation of the business.<sup>10</sup> A similar act, the Age Discrimination Act of 1975, disallows age discrimination in programs or activities that receive federal funds, including colleges and universities that receive monies from the U.S. Department of Education.<sup>11</sup>

One study found that age and productivity are significantly *positively* correlated.<sup>12</sup> However, in many workplaces, the stereotype of low older adult productivity persists. Ageism occurs in medicine when older adults do not receive the treatment needed for common conditions, when the concerns of older adults are dismissed as part of aging, and when medical schools do not provide adequate geriatric education to their students.<sup>13</sup> Additionally, ageism occurs in social exchanges. In the social arena, ageism is often more subtle.<sup>12</sup> Some ageism is the result of being socially separated, having misconceptions, or having misinformation.<sup>12</sup>

The Fraboni instrument was developed as a research tool for ageism.<sup>14</sup> Fraboni used it to create an operational definition of ageism, determine stereotypes of older adults, and determine attitudes toward older adults. It may also be used to assess the

constructs of antilocution (antipathy and antagonism toward older adults in speech), avoidance (behaviors or preferences to withdraw from social contact with older adults), and discrimination (extreme active prejudice concerning political rights, segregation, and intervention into older adult activities).

A previous study reported that younger people were more ageist than older people and that men were more ageist than women.<sup>12</sup> Additionally, health care professionals (nursing students) were reported to have negative attitudes toward working with older people in one study,<sup>15</sup> while having positive attitudes in others.<sup>16,17</sup> One of the studies that reported positive attitudes toward older adults also had participants who identified the care of older adults as challenging, stimulating, and a subject that should receive more time in professional education.<sup>16</sup> However, the negative results are disconcerting, and research is needed to understand the cultural factors leading to ageism. There is also a need to develop interventions to limit ageism, particularly in light of the report that clinical experience is the most significant factor in the determination of one's career path.<sup>17</sup>

Considering the previous study's results indicating that younger people are more ageist than other age groups,<sup>12</sup> we asked if dental hygiene students need educational experiences with older adults to break down the stereotypes. The rationale for this study was that ageist attitudes interfere with the provision of necessary dental care. The aim of this study was to determine if an instructional program involving senior dental hygiene students visiting and caring for residents of nursing homes would change their scores on a modified split Fraboni scale of ageism. The research hypothesis was that exposure to nursing home residents in a structured program with pre-nursing home experience education and post-visit debriefings would improve their modified split Fraboni scale value.

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## Materials and Methods

This study received West Virginia University Institutional Review Board approval (1301009547). The criteria for study participants were being registered with the university as senior dental hygiene students who were about to begin a community rotation practicum at two nursing homes and consenting to complete the surveys. The community rotation practicum to the nursing homes was a new addition

to the curriculum. No other courses were shortened or eliminated when this requirement was added.

Senior dental hygiene students completed a pre-nursing home experience questionnaire regarding ageism, after which they participated in a series of geriatric lectures and discussions, which included discussions about the students' anxieties regarding working with institutionalized older adults. The students were assigned to residents of the nursing homes who needed help in daily oral infection control and for whom the students would provide the needed toothbrushing and flossing. They were also assigned to work with the nursing home staff. All dental hygiene seniors then participated in two supervised four-hour nursing home experiences under the supervision of one of the authors. The students were debriefed after the nursing home visits and again completed a questionnaire regarding ageism.

There are no gold standards for assessing ageism;<sup>18</sup> however, the Fraboni instrument has been found to adequately assess cognitive and affective components of ageism and to have internal-consistency reliability with a Cronbach's alpha coefficient of 0.86.<sup>12</sup> This study used a modified, split Fraboni instrument, which consisted of a pre-nursing home experience questionnaire and a post-experience questionnaire. For participant anonymity, the pre-experience and the post-experience questionnaires were not linked. A split version of the Fraboni instrument was used to decrease participant statement sensitivity, which would have been possible if the students were previously exposed to all of the statements.

Fifteen statements (Fraboni instrument statements 1-15) were presented to the students as the pre-nursing home experience questionnaire, and fifteen statements were presented as the post-experience questionnaire (Fraboni statements 15-29). Response options were strongly disagree, disagree, neutral, agree, and strongly agree. In the original 1990 questionnaire, options did not include a neutral response, and non-response was coded as a 3 on the five-point scale. In our study, we followed a research protocol in which neutral was an option.<sup>18</sup> For statements presented in a negative format, response options were scored as follows: strongly disagree=1, disagree=2, neutral=3, agree=4, and strongly agree=5.<sup>12</sup> An example of a negatively presented statement on the Fraboni scale is "Many old people just live in the past."<sup>12</sup> For statements presented in a positive format, response options were scored as follows: strongly disagree=5, disagree=4, neutral=3, agree=2, and strongly agree=1.<sup>12</sup> An example of a positively

presented statement in the Fraboni scale is "Old people deserve the same rights and freedoms as do other members of our society."<sup>14</sup> Low Fraboni scores indicate less ageism. Scores on the pre- and post-experience questionnaires had potential values of 15-75 each. To test for reliability of the split scales, the data on both scales were analyzed with Cronbach's alpha tests.

For the pre-nursing home experience evaluation, students were directed to access an online questionnaire consisting of the modified, split Fraboni instrument (items 1-15). The students inputted their responses into the REDCap (Research Electronic Data Capture) electronic data capture tool at West Virginia University before beginning their rotation to the nursing homes. The system captured, secured, and validated the data; it also has audit trails and controls data importation and exportation.<sup>19</sup> The students then took part in pre-nursing home visit instruction, their nursing home visits, and debriefings.

Following the nursing home experience, the students were again asked to access an online post-experience questionnaire—this one consisting of the second portion of the modified, split Fraboni instrument (items 15-29). On some items, slightly adjusted language was substituted for that in the original questionnaire: "It is sad to hear about the old in our society these days," rather than "It is sad to hear about the plight of the old in our society these days"; "Feeling happy around old people is probably a common feeling," rather than "Feeling depressed when around old people is probably a common feeling"; and "I would like to go to an open house at seniors' club, if invited," rather than "I would prefer not to go to an open house at seniors' club, if invited."

IBM SPSS was used to analyze the data for Cronbach's alpha tests of reliability for the split instrument. The data were analyzed using SAS version 9.3 (SAS Institute, Inc., Cary, NC) to determine if there was a change in ageism in the students' attitudes after the nursing home experience. The analyses consisted of frequency determinations (means and standard deviations) for the pre and post experience and application of the t-test on the mean score difference of the pre-nursing home experience evaluation data versus the post-experience data.

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## Results

Thirty-two of a total thirty-nine dental hygiene students in the class participated in the pre-nursing

home experience questionnaire (82.1 percent response rate). The participants were similar in gender (99 percent female), education level (all seniors in dental hygiene education), and age (early twenties). Thirty students participated in the post-experience questionnaire (76.9 percent response rate). The students' mean score on the split-Fraboni pre-nursing home experience questionnaire was 34.2 (95 percent confidence interval: 32.2, 36.3). The mean score on the post-experience questionnaire was 32.7 (95 percent confidence interval: 30.1, 35.3). The minimum score on the pre questionnaire was 22.0, and the maximum was 45.0. The minimum score on the post questionnaire was 19.0, and the maximum was 46.0. Each statement averaged 2.28 in the pre questionnaire and 2.18 in the post questionnaire. The t-test on the mean score difference indicated a p-value of 0.3514. The analysis failed to reject the null hypothesis of no mean difference between the pre- and post-experience questionnaires.

The pre-nursing home experience questionnaire (split Fraboni, items 1-15) was analyzed for reliability and had a Cronbach's alpha of 0.738. Similarly, the post-experience questionnaire (split Fraboni, items 15-29) was analyzed for reliability and had a Cronbach's alpha of 0.831.<sup>12</sup>

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## Discussion

This study found an improvement in the dental hygiene students' positive attitudes toward older adults after the geriatric instruction, discussions about student anxiety, and clinical rotations through two nursing home facilities; however, the difference did not reach significance between the pre and post evaluations. The students entered the experience with a disposition between neutral and positive toward older adults, and their attitudes shifted slightly toward being more positive after the experience. It has been reported that there is limited research on age-based prejudice in general and especially when compared with racism and sexism: a PsycINFO search in 2012 resulted in 8,491 articles for racism, 2,836 for sexism, and only 750 for ageism.<sup>13</sup> Additionally, ageism is subtle, with some researchers describing it as socially condoned and an overlooked prejudice.<sup>13</sup> Our investigation intended to determine the pre-existing level of ageism in the dental hygiene student population and to test an intervention to improve their attitudes.

Although there are limited studies of ageism in health professions education, one study of hospital

doctors in Australia indicated a full Fraboni mean score of 61.5 or a mean statement score of 2.12 (a positive disposition toward older adults).<sup>18</sup> Our study results were a 2.28 pre-experience statement score and 2.18 post-experience statement score. The authors of the hospital doctors study noted that the Fraboni scale was not designed to have a cut-point for ageism and that the use of the scale is more appropriate as a comparison over time.<sup>18</sup> There is a need to improve geriatrics education and promote positive attitudes to older adults in all health education programs. Leung et al. reported that geriatrics clerkship programs, with student-older adult interactions, were effective in fostering positive attitudes.<sup>18</sup> Although our results were not significant, they supported the improvements in positive attitudes toward older adults that can occur in supervised rotation programs.

A recent study of undergraduate university students in the southeastern United States found that the students held negative attitudes toward older adults,<sup>12</sup> similar to the results of a study in Canada in which undergraduates showed negative attitudes toward older adults.<sup>20</sup> The Canadian study's authors found a lower level of ageism among students who had a higher level of geriatric knowledge, but knowledge was indirectly related to ageism through the mediation of anxiety. Overall, that study found that the more knowledgeable the students were, the less anxious they were, and the reduced aging-related anxiety was associated with reduced ageist attitudes. Similarly, in our study, an intervention that provided information and addressed students' anxiety before they participated in the nursing home experience, combined with the experience itself followed by a debriefing, reduced their negative attitudes about older adults.

Lowering negative attitudes about older adults is extremely important, especially in the delivery of health care. Health care professionals have reported ageist attitudes about the perceived worth of providing clinical interventions for older adults.<sup>21,22</sup> Negative stereotypes may be internalized by older adults, which may result in older adults' starting to talk, think, and act more slowly from receiving over-compensated speech from others, as well as having lower self-esteem and self-stereotyping that may be so powerful as to lead to failing memory, cognitive confusion, physical frailty, and cardiovascular consequences.<sup>13</sup> Negative attitudes also increase the potential for mistreatment, whereas respect and recognizing dignity create a climate of appropriate care.<sup>8</sup>

This study had several strengths. Student participation in the survey was high, and we attempted to eliminate the bias of statement sensitivity (being influenced by having previously viewed the whole survey or discussing the items on the survey with classmates) by using a split survey. In that way, if students discussed or remembered items from the pre-test, it did not influence the post-test. However, a split Fraboni survey had not previously been evaluated for an equivalent-forms reliability of the split halves. In our study, the split-halves did have reliability that corresponded with the reliability of the entire instrument. The complete scale had a Cronbach's alpha of 0.86,<sup>12</sup> the pre-nursing home experience evaluation had a Cronbach's alpha of 0.738, and the post-experience evaluation had a Cronbach's alpha of 0.831. However, the study's limitation to students in one year in one testing period indicates its results may not be applicable to other groups of students at this school, and its limitation to one school means the findings cannot be assumed to apply to all dental hygiene students.

For development of a program similar to the one in this study, an agreement must be reached between the dental hygiene program and nursing home for the students and their supervisor to work with nursing home residents in a state in which public health dental hygienists can provide care under their license. This process usually involves addressing HIPAA concerns as well as other legal and contractual agreements. The student supervisor may need faculty development to learn effective skills to manage student anxiety. There is also a need for the entire dental hygiene faculty to be supportive of the program for it to be successful. It is often difficult to find time in the curriculum to include innovations or to respond to trends in society; however, the older adult population will be a large part of any young dental hygienist's patient base, and providing the best care possible includes having positive attitudes toward older adults.

Geriatric education in the dental hygiene curriculum is advancing with the addition of innovative experiences for students to improve not only their skills but their attitudes toward older adults. The expectation that some future dental hygiene workplaces will be nontraditional and the need for improved dental health care for long-term care residents were the impetus for introducing a nursing home experience into our dental hygiene curriculum. For the curriculum to be successful, students need to gain structured knowledge and experiences, which

includes addressing their anxieties about working with institutionalized older adults. They also need to have supervised rotations, and they need a debriefing to address areas of concern and improvement. The debriefing sessions must occur in a nonjudgmental manner in which the students are encouraged to express their concerns. The sessions must be directed, so that the students can reflect upon their experiences and mature into professionals with positive attitudes towards their future older adult patients.

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## Conclusion

The purpose of this study was to determine if off-site exposure to nursing home residents with supervised oversight, pre-experience preparation, and post-experience discussions had the potential to improve dental hygiene students' attitudes toward older adults. Though the findings did not reach statistical significance, the analysis showed that the intervention resulted in improvement in the students' attitudes. Quality dental hygiene education programs should have as one goal the improvement of student skills and attitudes toward older adults. It is through improved skills and attitudes that appropriate dental care can become available for the older adult population and specific procedures and protocols can be established at regular intervals. Varied clinical experiences allow dental hygiene students to become comfortable in providing skilled dental services on a consistent and professional level to older adults in general and improving the oral health care of institutionalized older adults in particular.

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