Effect of Interdisciplinary Service Learning Experience for Audiology and Speech-Language Pathology Students Working With Adults With Dementia

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Purpose: An interdisciplinary service learning (SL) experience with audiology and speech-language pathology students was designed to examine changes in students' attitudes toward adults with dementia following an SL experience in which they socialized with nursing home residents who had dementia.

Method: Nineteen audiology and 24 speech-language pathology students completed an SL course, and 14 audiology and 18 speech-language pathology students did not participate in the SL course. The students interacted with 24 nursing home residents with dementia; specifically, the audiology students conducted 2 hearing evaluations with the residents, and the speech-language pathology students socialized with the residents during 15 visits. The students' attitudes toward older adults with dementia were assessed using Kogan's Attitudes Toward Old People Scale (Kogan, 1961) and qualitative analysis of their journal entries. The results were compared across groups over time.

Results: The SL groups showed more positive attitudes than the non-SL students, and their later journal entries were more positive than earlier entries.

Conclusions: This SL experience provided clinical opportunities for audiology and speech-language pathology students to work with adults with dementia. Direct contact with the residents resulted in more positive attitudes toward older adults in residential facilities.

Key Words: dementia, hearing loss, service learning, audiology students, speech-language pathology students, clinical experience

Service learning (SL) is a teaching pedagogy that provides students with educational and practical experience to gain further understanding of course content while serving those in need in the community (Bringle, Philips, & Hudson, 2004; Goldberg, McCormick-Richburg, & Wood, 2006). The two core elements of SL are (a) service activities that help meet community needs and (b) structured educational components that challenge participants to think critically about and learn from their experiences. Service activities give rise to learning opportunities, and what participants learn further informs their service. It also allows students participating in community services to meet community needs while developing their commitments and values, and the skills they need for effective citizenship (Mintz & Liu, 1994). SL thus provides students with real-world experience to apply theories and concepts learned in class and to make connections to the real world. In contrast to the clinical practicum in which students typically pay for the practicum while working in a clinical setting to gain experience, students in an SL course usually participate in an organized, unpaid service activity that is important to the community and reflects on course content with a broader appreciation of the discipline and an enhanced sense of civic responsibility (Bringle & Hatcher, 1996). Compared to community service or voluntarism that is not tied to an academic course, taking an SL course is more likely to enhance citizenship and learning by providing hands-on experience and increasing students’ discussions with faculty and community partners, and among classmates (Astin, Vogelgesang, Ikeda, & Yee, 2000).

Therefore, SL experience is a tool to provide the necessary educational and clinical training for audiology and speech-language pathology students and to support interdisciplinary...
teamwork to provide services for those in need in the community. For example, SL encourages audiology and speech-language pathology students to make the conceptual leap from memorization of facts about cognitive impairments to application of their knowledge by becoming personally engaged with adults with dementia. This experiential learning approach enables faculty to better prepare audiology and speech-language pathology students to serve adults with dementia.

One of the fastest growing segments of the population with communication difficulties is that of older adults with dementia (Kinsella & Phillips, 2005). These older adults are at higher risk for cognitively based impairments due to higher stroke incidence and a higher rate of brain injuries (“Age-Specific Excess Deaths,” 2000; Santacruz & Swagerty, 2001). With the aging of the baby boomer population, the problems of dementia are expected to rise dramatically in the coming decade. The challenge of helping this growing population of cognitively impaired elders with their communication disorders will fall to those speech-language pathology and audiology students currently in college. According to the American Speech-Language-Hearing Association (ASHA), it is the ethical responsibility of speech-language pathologists to provide appropriate cognitive-communication services to people with dementia at all stages of the disease process (ASHA, 2005b).

Some of the devastating side effects of cognitive impairments include communication disorders that affect speech and language (e.g., aphasia, dysarthria, problems with verbal fluency and verbal participation, slowness and reduced initiation, semantic problems, and problems with reading and writing). Ripich and Horner (2004, p. 4) stated that “eroding communication is the single most distressing problem” that caregivers face when dealing with a demented patient. Accordingly, increasing communication and interaction with individuals with dementia is recommended to increase their verbal fluency and verbal participation (Schmidt, Lingler, & Schulz, 2009). Because communication binds human beings together, communication intervention should be provided as much as possible for as long as possible to individuals with dementia (ASHA, 1988; Ripich & Horner, 2004). In addition, cognitive impairment has negative effects on auditory function. Approximately 30% of older adults with dementia have higher rates of hearing loss (Uhlmann, Larson, Rees, Koeppsell, & Duckert, 1989; Uhlmann, Teri, Rees, Mozlowksi, & Larson, 1989) and decline of central auditory function compared to their age-matched peers without dementia (Gates, Anderson, Feeney, McCurry, & Larson, 2008; Gates et al., 1995). Further, the prevalence and severity of hearing loss and communication disorders have been correlated with the severity of cognitive impairment in adults with dementia. Also, regular hearing screenings (Uhlmann, Larson, et al., 1989) are recommended for older adults with cognitive impairments. It is important that health care professionals be aware of the similarities of auditory dysfunction and cognitive impairment (Kricos, 2009). Health care professionals also must recognize that cognitive impairments and untreated hearing loss have negative effects on older adults and on their ability to actively participate in their own health care (Kricos, 2009).

To gain knowledge and clinical skills for evaluating and caring for adults with dementia, communication sciences and disorders departments need to provide clinical training to audiology and speech-language pathology students to serve this population. The SL paradigm fits nicely into the training models used by most programs. As a supplement to clinics, SL is a logical component. As most clinical settings serve limited numbers of adults with dementia, collaborative, interdisciplinary SL experiences provide opportunities for audiology and speech-language pathology students to enhance their clinical skills in assessing older adults with dementia (H. L. Cohen, Hatchett, & Eastridge, 2006). Hence, through SL, health care professionals of the future can become more competent in caring for and developing treatment plans for older adults suffering from dementia.

It is critical that health care providers have positive attitudes toward older adults to ensure a better quality of care. A high percentage of individuals who are involved in the care of older adults have negative attitudes toward older people, and this can directly affect the care they provide (Weir, 2004). Previous reports have shown that undergraduate nursing students (Gallagher, Bennett, & Halford, 2006) and high school students (Lookinland & Anson, 1995) have more negative attitudes toward older adults than do more educated, practicing nurses. Several researchers have concluded that education, experience, and increased knowledge of the aging process positively affect students’ attitudes and, in turn, their care toward older adults (Cottle & Glover, 2007; Gellis, Sherman, & Lawrance, 2003). Other researchers have reported that years in clinical practice and experience can increase positive attitudes toward older people (Lookinland & Anson, 1995). Thus, it is hypothesized that SL experience with older adults with dementia in the community not only gives students the ability to gain education, clinical experience, and teamwork but also positively affects and fosters students’ attitudes toward that population.

Although hearing loss is often treatable, it sometimes goes undetected in the nursing home population (Burkhalter, Allen, Skaar, Crittenden, & Burgio, 2009) and in adults with cognitive impairment (Moscicki, Elkins, Baum, & McNamara, 1985; Thomas et al., 1983). This is partly because this population is inherently difficult to test, as dementia results in a lack of attending to and understanding of test instructions, especially at later stages of dementia (Burkhalter et al., 2009). The SL experience, thus, should have a dual effect both on adults with dementia and on students. It should improve the older adults’ ability to focus on the tasks at hand, maximize their communication skills, and evaluate their hearing sensitivity. It should also help to strengthen students’ interdisciplinary experience and clinical skills in communicating with and obtaining reliable hearing thresholds in this difficult-to-test population.

This interdisciplinary SL study was designed to provide older adults who had dementia with 15 socialization visits (1 hr per visit) by speech-language pathology students, as well as pre- and post-SL hearing evaluations conducted by audiology students. The main purpose of the study was to assess changes in students’ attitudes, formally and informally,
toward older adults with dementia as a consequence of the SL experience. This was accomplished by comparing the attitudes of the audiology and speech-language pathology students who had an SL experience with the attitudes of the students without an SL experience. It was speculated that students’ attitudes toward older adults with dementia would become more favorable after the SL experience compared to non-SL audiology and speech-language pathology control groups. In addition, it was believed that direct contact with residents with dementia would result in more positive attitudes toward older adults with dementia.

Method

Participants

The current study utilized an interdisciplinary, inter-generational SL experience with 24 adults with dementia (23 female and 1 male) who were residents of a skilled nursing facility. Their ages ranged from 76 to 102 years (M = 86). All residents in the study had received a clinical medical diagnosis of dementia based on their medical records and administration of the Mini-Mental State Examination (Folstein, Folstein, & McHugh, 1975). According to the results of the mental exam, their cognitive impairment ranged from very mild (Stage 2) to moderately severe (Stage 5) dementia (American Psychiatric Association, 2000; Folstein et al., 1975). Twenty residents completed the study, and four passed away during the semester. None of the 20 residents were hearing aids or were enrolled in speech-language therapy.

First- and 2nd-year audiology students (n = 19; 13 women and 6 men) enrolled in a pediatric audiology SL course and 1st-year speech-language pathology students (n = 24; all female) enrolled in a cognitive disorders SL course participated in the study. Data also were collected from two student control groups (14 audiology students [13 women and 1 man] in their 1st year and 18 speech-language pathology students [17 women and 1 man] in their 2nd-year) who had not participated in an SL course (hereafter, the non-SL group). None of the students had any prestudy experience with older adults with dementia. All students voluntarily participated in this study. Informed consent for the older adults with dementia was obtained directly from them or their advocates or legal guardians. All measurements and assessments were conducted in accordance with the guidelines of the institutional review board at Missouri State University, and with approval from the director of the nursing home.

Assessments and Procedures

Each speech-language pathology student who participated in the SL experience was randomly paired with one resident at local nursing homes to serve as a social companion. In weekly visits, the speech-language pathology students participated in the residents’ activities of daily living such as reading, engaging in conversation, and playing cards with the residents to stimulate their verbal communication. Each speech-language pathology student spent a total of 15 hr over one semester with the resident assigned to the student. The students had time sheets that were verified by the nurse on duty at the facility each week. Each class period included a class discussion of students’ experiences at the nursing home. The focus of the discussions was to relate the didactic material being studied in the seated class to the outside experience provided through the SL project. Examples of these topics included behavioral challenges as a result of cognitive impairment, related communication problems, course and stages of dementia, students’ perceptions of the stages of dementia in their service partners, external influences on dementia, and management (reality therapy vs. validation therapy and other intervention techniques). Also, students had an opportunity to spend some time with the family members of the resident and were therefore able to relate those conversations when class discussions covered approaches to family support for individuals with dementia.

The audiology students conducted otoscopy and air-conduction pure-tone audiometry before and after the 15 speech-language pathology socialization visits, with 3–4 months elapsing between the first and second hearing test. The students were blinded to the pretest hearing thresholds when conducting posttest hearing thresholds. Pure-tone audiometry was performed bilaterally using standard clinical procedures (ASHA, 2005a) only at 0.5, 1, 2, and 4 kHz using a clinical audiometer (Maico MI 26) and insert earphones (Etymotic Research ER-3A). The hearing evaluations were conducted at the nursing facility in a quiet room with a noise level of 25 dBA.

The impact of the SL activities on the students was assessed on one outcome measure: attitude changes toward older adults with dementia. The students’ attitudes toward older adults were formally assessed using Kogan’s Attitudes Toward Old People Scale (Kogan, 1961). The Kogan’s Scale consists of 34 survey items about older people, with 17 negatively rated and 17 positively rated. Students were asked to respond to each survey item by selecting one of the descriptors on the 6-point Likert Scale that represented their opinion toward older people. The point descriptors ranged from strongly disagree (1) to strongly agree (6). To obtain a score, the values of the negative responses were reversed and tallied in with the positive responses, and the sum of the scores was used in the analysis. Higher scores represent a more positive attitude, whereas lower scores represent a more negative attitude.

The student responses on the Kogan’s Scale were evaluated separately for the audiology and speech-language pathology students because their SL activities and activity durations differed—15 hr of socialization visits per resident for speech-language pathology students versus 2–3 hr (previsit and postvisit) of audiometric evaluation per resident for the audiology students. Preliminary independent sample t tests were computed for the audiology and speech-language pathology student groups to document that the previsit scores for SL groups did not differ from the non-SL groups. Then two-way repeated measures analyses of variance (ANOVA; Group × Time) were applied separately to the audiology and speech-language pathology groups to look at SL effects on student attitude. The alpha was set at .025 to control for multiple ANOVAs. All statistical analyses were performed with SPSS/PASW Version 18.
Additionally, SL students’ attitudes were assessed through examination of journal entries related to their SL experiences. The speech-language pathology students recorded their experiences in journals at the beginning of their 15 visits and at the end of those visits, and the audiology students recorded their experiences in journals before and after hearing testing. The purpose of the journals was to capture the students’ reflections on their experience and to assess any change in attitude pre- and post-SL experience. The journal entries were subjected to content analysis to assess whether a shift in attitude had occurred and to determine the specific nature of students’ attitudes before and after the contact with older adults, and then to group their responses into emergent categories. Rudimentary content analysis had several steps. First, independent reviewers examined responses (often to a particular open-ended question) and derived categories to capture the full array of responses. Second, the reviewers met and arrived at a consensus on categories developed for those responses. The reviewers then independently reviewed responses and recorded each as a hit in each category to which it fit (many responses fell into more than one category). Then, the reviewers met to discuss the distribution (percentages) of responses falling into a particular category. A 100% interrater agreement rate meant that both reviewers arrived at the same distribution. If not, then responses had to be examined, and reviewers either had to agree on a category placement or agree to disagree (for further discussion of content analysis in qualitative research, see Glaser & Strauss, 1967, and Berg, 1989). In the current study, two reviewers independently coded the pre- and postexperience responses to determine whether there had been a positive shift from the beginning to the end of the experience. The reviewers then compared results and had a 100% interrater agreement on this dimension of response analysis. The reviewers then independently coded each response for substance and placed it in a category or often multiple categories (e.g., learning, communication difficulty, clinical experience with dementia, or bonding), and then compared these results, arriving at an interrater reliability rate of 97%.

**Results**

**Students Attitude Changes Using Quantitative Analysis of Kogan’s Scale**

The impact of the SL experience on students’ attitudes toward older people with dementia was formally assessed using Kogan’s Scale. The results of the \( t \) tests for the audiology groups showed no significant difference between the prescores of the SL group (\( M = 81.8 \)) and the non-SL group (\( M = 77.1 \)), \( t(31) = 1.614, p = .117, d = -.0586 \). Similarly, there was no significant difference between the mean prescores of the speech-language pathology SL group (\( M = 87.8 \)) and the non-SL group (\( M = 88.3 \)), \( t(39) = 1.126, p = .901, d = .041 \). Figure 1 illustrates the mean Kogan’s score of the audiology and speech-language pathology students’ attitudes toward older adults as a function of the 34 survey items. It shows higher postscores for the two SL groups compared to their prescores and to the non-SL groups. Figure 2 depicts a comparison of the groups’ means for their overall Kogan’s Scale scores, and it reveals that both SL audiology and speech-language pathology groups had higher postscores compared to their control groups. The results of the ANOVA revealed a significant main effect of audiology groups (SL vs. non-SL), \( F(1, 31) = 114.874, p < .001, \eta^2 = .787, \) and attitude, \( F(1, 31) = 141.036, p < .001, \eta^2 = .820, \) with a Group × Attitude interaction, \( F(1, 31) = 96.651, p < .001, \eta^2 = .757. \) For the speech-language pathology groups, the ANOVA showed a main effect for groups, \( F(1, 39) = 4.223, p < .025, \eta^2 = .098, \) and attitude, \( F(1, 39) = 5.217, p < .025, \eta^2 = .118, \) with a Group × Attitude interaction, \( F(1, 39) = 21.923, p < .001, \eta^2 = .360. \) The significant interactions are consistent with the SL effect on students’ attitudes toward older people with dementia.

**Students Attitude Changes Using Qualitative Analysis of Journal Entries**

The content analysis of the students’ journals revealed an overall shift of attitudes in a positive direction. Comparing journal entries pre- and postcontact with the older adults with dementia showed that a majority (79%) of students shifted attitudes in a positive direction, while only a few showed a negative shift (10.5%) or no shift at all (10.5%). Further content analysis of individual entries prior to the SL experience indicated three main areas of focus or concern for students. The largest category of responses related to the idea of task and communication difficulty (53%) in the sense that the older adults would be unable to follow instructions or would be difficult to test. The following is an example of this category of responses: “Hearing testing will be difficult to administer. They won’t be able to understand the test instructions.”

The next largest category of responses (32%) involved the concern about being around those who were experiencing health decline: “I’ll be sad if they are too sick or their health condition is declining.” Nervousness about working with older adults (21%) was the third category of responses and is illustrated by the following quote: “I’m nervous because this will be a challenging group to work with.”

Examining the responses in students’ journals after the SL experience revealed an overall positive outcome from the direct contact with older adults. The largest category of responses focused on learning from the experience (47%). The following quote illustrates this category of responses: “This was a new experience to me to talk with a lady who has dementia, which is worth it.”

The second largest category of responses concerned expressions of bonding with residents (42%). These comments centered around feelings of affection, liking, and having fun with the residents. The following examples illustrate this category: “The women residents liked me a lot and I am so happy that someone loved me!” and “I had very good conversations with the residents before and after testing and we laughed together.”

Two additional categories of responses surfaced: students who expressed a desire to work with older clients in the future (21% vs. 16% pre-SL), and those who commented on the difficulty/challenge of testing older adults (21%).
Audiometric Results

All residents had within normal middle ear function as indicated by otoscopic examination and within normal 226-Hz tympanometry. The mean static acoustic admittance at the tympanic membrane level (0.68 mL), ear canal volume (1.2 mL), mean tympanometric peak pressure (−15 daPa), and tympanometric width (81 daPa) agree favorably with those reported by Wiley et al. (1996). In general, communication during the social interaction with the residents and during hearing testing was challenging, causing a relative difficulty obtaining reliable response in 55% of the residents, but this was reduced with repeated instructions. Although two of the 20 residents did not respond at all during hearing testing, 18 residents (90%) gave valid responses. All 18 residents had, on average, bilateral symmetrical mild to moderately severe high-frequency hearing loss on the first and second hearing tests, with 6–11-dB HL test–retest reliability. Although bone-conduction thresholds were not obtained, it is likely that the hearing losses were sensorineural given the age and

Figure 1. The mean scores of the 34 survey items of the Kogan’s Scale for the audiology students (AuD; n = 19 service learning [SL], n = 14 non-SL) and the speech-language pathology students (SLP; n = 24 SL, n = 18 non-SL), showing the students’ attitude toward older people with dementia for the SL groups (pre- and postscores) and the non-SL groups (pre- and postscores). The higher postscores for the two SL groups indicate more positive attitudes post-SL compared to pre-SL and pre- and postscores of the non-SL groups. In contrast, the prescores of the SL and the non-SL groups and the pre- and postscores of the non-SL groups are comparable.
population of the participants and within normal tympanograms. Although the audiometric testing was not the primary focus of the study, the residents were compliant during testing, which indicates that individuals with dementia can be tested behaviorally.

**Discussion**

The results of the formal assessment of the SL students’ attitudes toward older people revealed that the prescores of the audiology and speech-language pathology students’ attitudes toward older people were similar between the SL and the non-SL groups. In contrast, the audiology and speech-language pathology students who had the SL experience had more positive attitudes toward older adults with dementia than the students without the SL experience, suggesting that the SL experience improved students’ attitudes toward older people with dementia. As shown in Figure 2, Attitude × Group interaction is explained by the significant changes in students’ attitudes post-SL without parallel attitude changes in the postscore of the non-SL group. These current results support previous findings that general attitudes toward old people become more positive following SL experience with normal-functioning older people (Butler & Baghi, 2008; Dorfman, Murty, Ingram, Evans, & Power, 2004; Gallagher et al., 2006). Nochajski, Waldrop, Davis, Fabiano, and Goldberg (2009) reported that female students usually have more negative attitudes than male students. The current findings of positive attitudes toward older adults with dementia post-SL experience contradict the findings by Nochajski et al. (2009), because the majority of our SL students were female \((n = 37)\) versus male \((n = 6)\).

Although the Kogan’s Scale was developed to assess attitudes primarily toward normal-functioning older adults, the current findings suggest its sensitivity toward nursing home residents with dementia. Having a similar population of adults with dementia but using a different assessment tool, the Aging Semantic Differential scale, Fruhauf, Jarrot, and Lambert-Shute (2004) reported improved students’ attitudes after the SL experience with older adults with dementia. The reported positive attitudes toward adults with dementia after SL experience using the Kogan’s Scale (the current study) and Aging Semantic Differential scale (Fruhauf et al., 2004) is another indication of the sensitivity of the Kogan’s Scale. In 2008, Iwaski and Jones compared the attitudes of two groups of college students toward older adults using the Kogan’s Scale and the modified version of the Aging Semantic Differential scale (Polizzi & Millikin, 2002). Iwaski and Jones (2008) reported that the Kogan’s Scale is less sensitive than the modified Aging Semantic Differential scale due to possible shortcomings in its positive and negative survey items that affect its psychometric features. Yet, this interpretation is flawed because Iwaski and Jones did not administer both surveys to each group. For valid comparisons, future investigations are required to specifically compare students’ attitudes toward adults with dementia using both the Kogan’s Scale and the modified Aging Semantic Differential scale in the same participant group. With the current findings of positive attitudes post-SL in both audiology and speech-language pathology groups compared to the postscores of the non-SL groups, it can be concluded that SL experience can positively affect the attitudes of students toward older adults with dementia.

The qualitative analysis of students’ journal entries clearly demonstrated a shift toward more positive attitudes...
about elderly individuals and interactions with them as a result of the SL experience. Compared to the precontact entries, postcontact entries indicated that students learned from the direct contact, experienced increased comfort and confidence with older residents, developed an interest in working with this segment of the population, and showed growth in professional confidence despite the challenges and difficulties of testing individuals with dementia. Given that students did not have previous experiences with older adults with dementia to shape their attitudes toward elderly people, their positive attitudes following the SL experience cannot be attributed to this factor. Instead, it appears that the SL experience has contributed substantially to development of student’s positive attitudes toward older people with dementia. This attitude shift should enhance the students’ clinical experience working with older adults with cognitive impairment and hence improve the quality of care provided to this population. According to Lookinland and Anson (1995), it is possible that the attitudes of students would show a greater shift toward the favorable with more extensive contact and experience with the older residents.

The mild to moderately severe hearing loss in 90% of our participants is representative of the most common severity of hearing loss in adults over the age of 65 years (National Academy on an Aging Society, 1999) and is similar to the severity of hearing loss in individuals with Alzheimer’s disease (31.8 ± 13.2; Uhlmann, Larson, et al., 1989). However, the more severe hearing loss in Burkhalter et al.’s (2009) study, in 17 of 198 residents of a veterans home, is most likely because a large number of their participants were male veterans who were at increased risk of noise-induced hearing loss. It is reported that the risk of dementia significantly increases with hearing loss above 40 dB HL (Uhlmann, Larson, et al., 1989) and that mild memory impairment has negative effects on auditory processing (Gates et al., 2008). The combined effect of cognitive impairment, mood change, and hearing loss may explain the relative difficulty in communicating with the residents in the current study. The use of frequent reminders and encouragements during test and retest sessions in the current study improved response reliability (Durrant, Gilmartin, Holland, & Kamerer, 1991). Although 90% of our participants were candidates for hearing aid use, none of them wore hearing aids, which is in agreement with the reported data that older adults with mild to moderate hearing loss do not usually wear hearing aids (National Academy on an Aging Society, 1999). Without appropriate amplification, presence of hearing loss intensifies some symptoms of dementia (Kricos, 2009; Larson, Buchner, Uhlmann, & Reifler, 1986) and negatively affects performance on cognitive function tests (Otta, Carlin, & Harmon, 1981; Uhlmann, Teri, et al., 1989). Therefore, the use of cognition-friendly hearing aids is recommended because it specifically incorporates the patient’s cognitive capacity to maximize listening and understanding of speech, increase quality of life, and optimize cognitive status (Beck, 2009; Beck & Sockalingam, 2009; Lunner, Rudner, & Romberg, 2009).

Two interesting findings were noted during hearing testing. A female resident experienced dizziness and had nystagmus when exposed to moderately loud low-frequency sound, known as Tullio’s phenomenon or sound-induced vertigo (Rosenberg & Gizzi, 2000). The audiology report included a recommendation for a medical referral of the patient for otoneurologic and vestibular evaluation. Interestingly, the medical diagnosis was positive for Tullio phenomenon due to superior semicircular canal dehiscence. The second case was another female resident who had previously been fluent in both English and Spanish. As a consequence of her dementia, the patient lost her English language but kept her native Spanish language. This phenomenon is known as “first in, last out” (Larkin, 2011). From this case, the students appreciated the importance of knowing another language to communicate not only with non-English speakers but also with bilingual dementia patients for whom English is a second language.

Conclusion

This interdisciplinary, intergenerational SL experience provided graduate students in audiology and speech-language pathology programs with indispensable, valuable opportunities to evaluate and serve older people with dementia. The clinical hands-on experience with individuals with dementia improved students’ attitudes toward older people, which should positively affect the quality of care for that population. In addition, it helped students better understand the concepts they were learning in the classroom and to understand the unique needs of this population. Students experienced the challenges of dealing with adults with dementia and conducting behavioral hearing testing in that demographic due to cognitive impairment and mood changes. They learned to identify the need for different test procedures and the importance of frequent reminders during testing to get reliable responses. In addition, the audiology students had the chance to make the clinical diagnosis of Tullio phenomenon and to refer the patient for further evaluation. The speech-language pathology students also gained theoretical and clinical foundations of the dementias and firsthand observation of some aberrant behaviors.

This study has demonstrated positive educational outcomes of SL courses in facilitating learning, increasing clinical training, and improving motivation. This is in agreement with previous research on SL in higher education (Goldberg et al., 2006; Kaf & Strong, 2011; Kember & Gow, 1994; Kennedy & Shiller, 2004; Levesque, Sell, & Zimmerman, 2006). Also, this SL experience allowed students to develop a network with other health care providers and/or researchers while benefiting from the research and learning projects. Moreover, the students were able to contribute to the community and build professional relationships with persons who may lack the opportunity for a one-on-one relationship.

Nevertheless, care of older patients with dementia is no longer the sole domain of one profession. This SL project highlighted the importance of an interdisciplinary team approach between audiology and speech-language pathology professionals to serve patients with dementia. This study identified a need for the development of education and training in the knowledge and practices of audiology and speech-language pathology students. The information
gathered from this SL experience could assist programs in universities to incorporate more interactions with older people for their audiology and speech-language pathology students. This opportunity may increase positive attitudes and experiences with a population that most health care fields serve on a daily basis. With the aging of the U.S. population, memory disorders are expected to become a much more common problem. There is an increased need for excellent services for persons exhibiting dementias. Results of this and future research have the possibility of helping professionals in the field of audiology and speech-language pathology and other health and human services professions to recognize the implications of educating students about older populations. The result of that enhanced education could be expected to improve their overall attitudes and preparedness in working with this population, thus providing quality care and advocating for services for individuals with dementia. The overall results suggest that SL courses should be incorporated into the curriculum because they fit well into the training model programs in communication sciences and disorders.

Limitation of the Study and Future Research

There are general recommendations that arise from this study which may be expanded in future research. In regard to participants with dementia, no sociodemographic information was obtained, such as duration and etiology of the dementia, history of depression, medical history, other health problems, and medications. To obtain more definite results of attitudes toward older people, the amount of students’ current and past interactions with older people should be taken into account. The Kogan’s Scale survey tool could also be simplified, as it was confusing for students to use the scale in answering questions. Also, it is recommended to use the age of the population rather than “old or elderly” descriptors in the Kogan’s Scale to avoid biasing students’ scores because of the negative stereotype of the word “old or older” (Polizzi & Millikin, 2002). Furthermore, it would have been helpful to have asked students open-ended questions to elicit perceptions about older people in general to separate out their views of older adults in nursing homes. It would also help to have students keep more detailed, in-depth journal entries throughout the SL experience to capture the richness of their experiences with the older adults and to assess how students’ attitudes changed over time as a result of that experience. Further study is needed to compare hearing thresholds before and after actual speech therapy in individuals with cognitive impairments and control groups without dementia matched on age and gender. Also, speech audiometry and screening for auditory processing disorders should be part of the audioligic evaluation of patients with dementia.

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