AJA

Research Article

Awareness of the Profession of Audiology Among Ethnically Diverse Adolescents: A Pre- and Post-Education Study

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Purpose: The purpose of this study was to investigate knowledge about the profession of Audiology among adolescents from diverse backgrounds before, immediately after, and 6 months after an educational program on the profession of Audiology.
Method: Adolescents (N = 152) from ethnically diverse backgrounds responded to a survey investigating their awareness about Audiology. Thereafter, they participated in an educational program on the profession of Audiology. One third of the participants were invited to respond to the survey immediately after the educational program. Six months after the educational program, 120 of the original sample of 152 participants responded again to the survey in order to assess if the gains from the educational program were retained.
Results: The results from the baseline survey indicated that approximately 25% of participants were aware about the profession of Audiology. None of the participants reported that balance assessment or management was within the scope of practice of audiologists in the baseline survey. The chi-square test indicated that the educational program resulted in significant enhancement in awareness about the profession of Audiology immediately after education. Results also indicated that the gains in knowledge were retained 6 months after education.
Conclusion: In light of the existing literature, it is clear that there is a need to recruit an ethnically diverse talent pool of individuals who will choose a career in Audiology in the forthcoming decades. Preliminary results from this study could be helpful in strategizing efforts to improve the visibility of Audiology to younger college aspirants. Advantages of reaching to school-age students at grassroots levels and educating them about the profession of Audiology are discussed in this article.

A seminal paper by Windmill and Freeman (2013) utilized a "physician supply model" to understand the demand and supply of audiologists in the next 30 years. In the next 30 years, the population of older adults (65 years old and above) in the United States will approximately be 21% (Longley, 2011) of the general U.S. population, and approximately half of that population will have some degree of hearing impairment (Brodsky & Cooke, 2000). Specifically, 50% of adults between 60 and 69 years of age and 80% of adults greater than 85 years of age have hearing loss that is significant enough to interfere with everyday communication (Cunningham & Tucci, 2017). Projections by Goman, Reed, and Lin (2017) indicate that hearing loss among adults in the United States over the age of 20 years will gradually increase from 15% in 2020 to 22.2% in 2060. Similarly, vestibular dysfunction is also prevalent in adults above 60 years of age and ranges from 45% to 88% (Agrawal, Carey, Della Santina, Schubert, & Minor, 2009). The Global Burden of Disease Study states that hearing loss is the fourth leading cause of disability globally (Vos et al., 2017). With the increase in life expectancy in developed countries, the prevalence of hearing and balance disorders among older adults is estimated to increase worldwide.

However, Audiology workforce projections by Windmill and Freeman (2013) indicate a negative growth rate for Audiology in the next 30 years based on factors such as the number of graduates entering the profession, the number of audiologists leaving the profession (as a result of aging or retirement), and an attrition rate of 40% (as a result of maternity, illness, disability, job elimination, etc.). Longitudinally, the number of audiologists leaving the profession as a result of retirement or attrition is

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Editor-in-Chief: Sumitrajit Dhar
Editor: Monita Chatterjee
Received May 30, 2019
Revision received July 21, 2019
Accepted August 8, 2019
https://doi.org/10.1044/2019_AJA-19-0072

Disclosure: *The author has declared that no competing interests existed at the time of publication.*

assumed to remain fairly constant. If the number of people entering the Audiology workforce does not significantly increase in the next 30 years, the growing demands in audiological health care will not be met. Hence, Windmill and Freeman aptly argue that "increasing the number of persons entering the profession is the most direct method of increasing the growth rate" (Windmill & Freeman, 2013, p. 413).

One aspect of improving the efficiencies within the profession of Audiology is to increase the number of Audiology aspirants from diverse backgrounds. It is crucial, at least in part, that present-day adolescents and young adults aspire to build a career in Audiology and are satisfied with their career choice in order to meet the demand for audiologists. A seminal paper published in *The Lancet* by global leaders in health care and education recommended that educational and affirmative action programs need to be developed globally, to enlarge the group of diverse, underrepresented students in secondary educational settings (i.e., ages 14–18 years) who aspire to build health care–related careers (Frenk et al., 2010).

The first essential step toward achieving this idealistic goal is for adolescents and young adults to be aware of the profession of Audiology. A series of studies with college students from 2000 to 2018 have indicated that most college students "stumble" upon Audiology as a profession (Brodsky & Cooke, 2000; Donai, Hicks, & McCart, 2013; Donai & Hood, 2018; Emanuel, Donai, & Araj, 2012; Stone & Pellowski, 2016). However, data from some of these studies also indicate a steady rise in the percentage of new college aspirants' awareness of the profession of Audiology. For example, survey results from Donai et al. (2013) and Donai and Hood (2018) indicated a significant increase in self-reported awareness of Audiology from 2009 (32%) to 2012 (45%) and from 2012 to 2018. In 2018, approximately 50% of the study sample indicated that they were aware of the profession of Audiology, which indicates an upward trajectory in terms of awareness of Audiology among college students.

College education is becoming a priority for American families since they understand that the economic payoffs of postsecondary education far exceed those of high school education alone (Carnevale, Rose, & Cheah, 2013; Engle, 2007). The science of vocational psychology emphasizes the importance of introducing possible career options to adolescents admitted in schools in order to propel them toward higher education (Hirschi & Läge, 2008; Rogers & Creed, 2011; Shepard & Marshall, 1999). In a nationally representative, longitudinal study in the United States, Tai, Liu, Maltese, and Fan (2006) studied 3,359 adolescents with respect to their career choices. Specifically, they studied the relationship between the adolescents' expectations of entering a science-related career and following through their career choice by the time they were 30 years of age. Their data indicated that approximately 50% of students who were influenced regarding their science-based career choice during adolescence followed through it. They highly stressed the importance of paying "close attention to children's early exposure" (p. 1144) to a science-related profession in order to get them interested in the profession.

Lastly, while a handful of studies have investigated the knowledge and perceptions of the public regarding hearing and hearing-related disorders (Crandell, Mills, & Gauthier, 2004; Squires, Pakulski, Glassman, & Diehm, 2019), a fewer number have investigated public knowledge about Audiology as a profession (Joubert, Sebothoma, & Kgare, 2017). Additionally, understanding the role of an audiologist is crucial so that young individuals know whom to seek help from, for balance and hearing-related concerns involving self as well as family and friends.

On the basis of the above studies, it is reasonable to infer that it might be crucially important to study awareness of the profession of Audiology in adolescents from diverse backgrounds in secondary school settings and educate these young individuals regarding Audiology. This information could add to existing data to help carve out policies to increase awareness about our profession. It could help improve our profession's visibility, thereby enhancing the growth rate of our profession by seeking talented individuals across diverse ethnic and cultural backgrounds and different gender identities.

The aims of this investigation were as follows: (a) to investigate awareness about the profession of Audiology among a diverse group of adolescents enrolled in secondary schools in Queens and Staten Island, New York, and (b) to examine the effect of intervention (an "Audiology education program") on "knowledge of Audiology" in a randomly selected subset of the abovementioned sample. Since there is a dearth of research investigating awareness of the profession of Audiology among school-age adolescents, such data will help with the creation of a structured approach to enhance the visibility of Audiology and possibly help attract youth to consider it as a profession. A third purpose was (c) to study if the effects of the Audiology education program were retained 6 months after education.

Method

The study was approved by the institutional review board of St. John's University.

Survey Dissemination

A paper-based survey similar to that used by Donai et al. (2013), with modifications, was used. Prior to data collection with the modified survey, pilot data were collected from 10 adolescents in Queens, New York. The purpose of the pilot study was to ensure the face and content validity of the questionnaire. Specifically, Questions 1–15 from the original survey (except Questions 4, 5, 6, 7, 8, 9, and 9a) were used in this survey. The excluded questions (5, 6, 7, 8, 9, and 9a) were aimed at predominantly gauging college students' academic interests and aspirations upon completing a baccalaureate degree in that study. Hence, these questions were deemed not crucially important

with respect to students in secondary school settings. Question 4 in Donai et al. (2013) asked for the mother and father's highest level of education. This question was excluded from this survey as we did not plan on analyzing that information. Because all the participants in this study were adolescents in school settings, options for the question "When did you learn about the profession of Audiology?" were modified to "Elementary School," "Middle School," "High School," "Other," or "I Don't Know." The adapted survey used in this study is provided in the Appendix.

The principals and educators at local schools in Queens and Staten Island, New York, assisted with implementing this project. Approximately 160 students from local schools were invited to participate in the study (out of which, 152 students participated). None of the participants in this study had participated in a communication sciences and disorders–related service learning project or school-based hearing screenings as reported by their teachers (to the best of their knowledge). This information was important to determine if students already had some exposure to audiology in their school settings. Interested students participated in this classroom-based project during a typical school day or at an after-school program in a large classroom equipped with a computer and a projector. Teachers and coordinators from the schools were invited to be present during the session. The first 10–15 min of the study involved survey dissemination and completion. The next 30 min involved an "Audiology education program" (described below) by the author, who was assisted by graduate and undergraduate students from St. John's University. Randomly selected participants from the participant pool (n = 50) were requested to respond specifically to three questions, after presentation: "Do you know what an audiologist does?"; "What do you think is the minimum education requirement to become a licensed/certified audiologist?"; and "State what you think an audiologist does." These three questions were chosen to specifically evaluate any change in knowledge regarding audiology. Out of the 50 randomly selected participants, 31 (62%) submitted completed postpresentation surveys. Additionally, all 152 participants were requested to respond to the three aforementioned questions 6 months after presentation. One hundred twenty responses were obtained 6 months after presentation (78.95%).

Participants were asked to respond to the best of their ability. If they did not know the answer to a question, they were given the option of guessing the answer. Participants were also told that they had the choice of not responding to the survey or excluding certain questions.

"Profession of Audiology" Education Program

An interactive educational and instructional program on the profession of Audiology was created by utilizing online resources from professional bodies (American Academy of Audiology, n.d.; American Speech-Language-Hearing Association, 2018) as well as the Bureau of Labor Statistics (n.d.) and U.S. News & World Report (n.d.). Discussion was geared toward answering the question "What is Audiology and who is an audiologist?" and discussing the path to becoming an audiologist (undergraduate coursework in speech-language-hearing sciences and clinical doctorate in Audiology), qualifications for licensure and certification in Audiology, and the scope of practice of audiologists. Participants were also interested in learning about the "demand for Audiology," "salary," and "work settings." General information about the demand for qualified researchers in Audiology or hearing sciences was also provided. The author's information was provided to the students and teachers if questions were to come up in the future or if students planned to seek mentorship or additional experiences pertaining to Audiology.

Postpresentation responses to the three questions were requested from approximately one third of the participants. Similarly, responses to the three questions were requested from all the participants, 6 months after presentation.

Results

Demographics

Approximately 160 middle school and high school students were invited, out of which 152 students participated in the study (95% participation). Participants were between 13 and 18 years of age (M = 14.97, SD = 1.68, Mdn = 15, mode = 17). A majority of the participants identified themselves as African American (51.32%), followed by Asian/Pacific Islander (19.08%), Hispanic (13.8%), of other or mixed ethnicities (9.87%), American Indian (4.61%), and Caucasian (1.32%). Eighty-three (54.61%) students identified themselves as male, and 69 (45.39%) students identified themselves as female.

Baseline Knowledge of Audiology

Table 1 outlines the baseline knowledge of Audiology for the questions on the survey. Specifically, Question 4 asks, "Do you know what an audiologist does?", with five possible responses: 1: "Yes, Definitely Know", 2: "Rather Sure"; 3: "Somewhat Sure"; 4: "Not Sure"; and 5: "No, Definitely Not." Responses were grouped into "yes" (Responses 1–3) and "no" (Responses 4–5) for further analysis, as described in Table 1.

A comparison was made between the participants in the "yes" group between this study and that by Emanuel et al. (2012; a study with the largest sample size of n = 1,090, of which 1,077 participants responded to the question inquiring about "what an audiologist does") as well as between this study and that by Donai et al. (2013; the most recent study published in a peer-reviewed journal, with a sample size of n = 603, of which 599 participants responded to the question inquiring about "what an audiologist does"). A chi-square analysis comparing the results from this study with those from Emanuel et al. (2012) indicated that the proportion of participants who were categorized in the "yes" group was as follows: χ^2 = 0.979, df = 1,

Table 1. Baseline knowledge of Audiology for the study participants.

Question	Summary of responses
Do you know what an audiologist does?	• *N* = 152 • 1: "Yes, Definitely Know" (*n* = 10, 6.58%); 2: "Rather Sure" (*n* = 7, 4.6%); 3: "Somewhat Sure" (*n* = 22, 14.47%); 4: "Not Sure" (*n* = 91, 59.87%); 5: "No, Definitely Not" (*n* = 22, 14.47%). • The above responses were grouped into "yes" (Responses 1–3) and "no" (Responses 4–5) for further analysis. The "yes" group (*n* = 39) consisted 25.66% of the participants, and the "no" group (*n* = 113) consisted 74.34% of the participants.
Briefly state what you think an audiologist does.	This analysis was performed only for participants in the "yes" group (*n* = 39). • Responses to Question 9 (briefly state what you think an audiologist does) were classified into nine groups, similar to Emanuel et al. (2012) and Donai et al. (2013). • Twenty-eight of the 39 participants (71.79%) in the "yes" group correctly stated what an audiologist does. The following responses were deemed to be correct: 1. Hearing ("doctor who checks hearing," "Audiologists test people's hearing. They also study the part of the brain that processes audio," "An audiologist measures your hearing, shows what sounds you can and cannot hear"; 12 of the 28 participants [42.86%] in the "yes" group responded "Hearing") 2. Ears/ear doctor ("Checks your ears," "ear doctor"; 16 of the 28 participants [57.14%] in the "yes" group responded "Ears/ear doctor") 3. Listen (no correct response obtained that involved the term "listen") 4. Hearing aids (none of the participants mentioned "hearing aids" or other auditory prosthesis) 5. Vestibular (none of the participants mentioned vestibular, balance) • Other responses from 11 of the 39 participants in the "yes" group: 6. No answer (seven of the 11 participants [63.63%] provided no answer) 7. Wrong/unusual answer ("builds speakers and headphones," "machine that makes different sounds or noises," "listens to a poem"; three of the 11 participants [27.27%] supplied wrong/unusual answers) 8. Sound ("studies about sound"; one of the 11 participants [9.09%] responded "studies about sound") 9. Communication/SLP (none of the participants mentioned communication, SLP, language, learning, etc.)
How did you first learn about the profession of Audiology?	This analysis was performed only for participants in the "yes" group who correctly responded to "Briefly state what you think an audiologist does" (*n* = 28). Don't know/Other (*n* = 11, 39.29%), School (*n* = 9, 32.14 %), Internet (*n* = 3, 10.71%), Family/Friends (*n* = 2, 7.14%), TV/Radio (*n* = 2, 7.14%), Health Fair (*n* = 1, 3.51%)
When did you first learn about the profession of Audiology?	This analysis was performed only for participants in the "yes" group who correctly responded to "Briefly state what you think an audiologist does" (*n* = 28). Middle School (*n* = 10, 35.71%), High School (*n* = 10, 35.71%), I Don't Know (*n* = 8, 28.57%)
Have you ever been seen by an audiologist?	This analysis was performed only for participants in the "yes" group who correctly responded to "Briefly state what you think an audiologist does" (*n* = 28). Yes (*n* = 10, 35.71%), No (*n* = 18, 64.29%)
What do you think is the minimum education requirement to become a licensed/certified audiologist?	This analysis was performed only for participants in the "yes" group who correctly responded to "Briefly state what you think an audiologist does" (*n* = 28). Doctoral Degree (*n* = 7, 25%), Master's Degree (*n* = 4, 14.29%), Bachelor's Degree (*n* = 3, 10.71%), High School Diploma (*n* = 1, 3.57%), Don't Know (*n* = 13, 46.43%)

Note. SLP = speech-language pathology.

$p > .05$. No significant difference was found in terms of the "yes" group between the study by Emanuel et al. (2012) and this study. A chi-square analysis comparing the results from this study with those from Donai et al. (2013) indicated that the proportion of participants who were categorized in the "yes" group was as follows: $\chi^2 = 59.318$, $df = 1$, $p < .01$. Hence, the proportion of participants who were categorized in the "yes" group in Donai et al. (2013) was significantly greater than that in this study.

An important caveat regarding the baseline knowledge of Audiology for this study is that, of the participants with self-reported awareness of "Yes, Definitely Know," 100% correctly defined what an audiologist did, 60% had been seen by or had accompanied someone to an audiologist, and 70% correctly stated that the minimum education requirement to become an audiologist is a doctoral degree. Of this group, 100% of those who visited an audiologist reported that the minimum education requirement to become an audiologist is a doctoral degree. The significance of this finding is enumerated in the Discussion section.

Knowledge of Audiology After "Profession of Audiology" Education Program

Thirty-one of the 50 randomly selected participants returned responses to survey Questions 4, 8, and 9. Of the 31 participants, 100% reported "Yes, Definitely Know" for "Do you know what an audiologist does?" A chi-square test indicated a significantly greater proportion of participants in the "yes" group as a result of the Audiology education program: $\chi^2 = 118.31$, $df = 1$, $p < .01$.

Twenty-seven (87.09%) reported that the minimum requirement for certification and licensure in Audiology is

a doctoral degree. Four students reported "Don't know" for this question. The chi-square test also indicated a growth in correctly reporting that the minimum requirement for certification and licensure in Audiology is a doctoral degree after the Audiology education program by the "yes" group: $\chi^2 = 78.247$, $df = 1$, $p < .01$.

All participants correctly reported what an audiologist does with responses such as "tests your hearing and balance," "tests/treats ears and helps us walk straight," "knows functions of the ear and how to analyze hearing problems," "gives hearing aids," "manages hearing and balance issues," "hearing aids, cochlear implants," and "tests your hearing, balance, protecting ears." A significantly greater proportion of participants (100%) in the "yes" group could correctly state what an audiologist does, after Audiology education: $\chi^2 = 32.84$, $df = 1$, $p < .01$. Twenty-two of the 31 (70.97%) participants mentioned "balance" in their response, a stark increase in their overall knowledge compared to baseline, where 0% had mentioned "balance" in their responses: $\chi^2 = 170.97$, $df = 1$, $p < .01$.

Knowledge of Audiology 6 Months After Education

One hundred twenty of the 152 participants returned responses to the three questions (Questions 4, 8, and 9) 6 months after presentation. Of the 120 completed surveys, 100% reported "Yes, Definitely Know" for "Do you know what an audiologist does?" There was a significant increase in the proportion of participants in the "yes" group compared to baseline: $\chi^2 = 118.31$, $df = 1$, $p < .01$. However, since 100% of the participants were in the "yes" group immediately after Audiology education and 6 months after education, it can be concluded that self-reported awareness reached ceiling effects, and the effects were retained 6 months later. One hundred ten participants (91.66%) reported "doctoral degree" as the minimum education requirement to become a licensed or certified audiologist, a significant increase compared to baseline: $\chi^2 = 91.40$, $df = 1$, $p < .01$. All participants correctly reported what an audiologist does: 43 responded with comments such as "tests or treats hearing problems," two mentioned "balance disorders" exclusively while not mentioning hearing disorders, and 75 mentioned testing or treating both hearing and balance in their responses. Similar to the "immediately after the Audiology education program" scenario, 100% of the participants correctly reported what an audiologist does 6 months after Audiology education.

Discussion

This research's purpose builds on suggestions laid out by the Robert Wood Johnson Foundation study and a resulting report that aimed to alleviate a shortage in nurse practitioners (Kimball & O'Neil, 2001). As described in the report, various careers and professions face a dearth in talent across genders and cultures. Most of these professions, such as K–12 educators, the military, and faith-based professions (e.g., clergy), reach out to potential talent pools by targeting younger generations across various ethnicities and genders. Their modus operandi involves improving visibility of their profession, designing campaigns to attract and retain youth, focusing their recruitment efforts on grassroots/local/community-based levels, and campaigning to diverse and underrepresented youth (e.g., the Episcopal Church's effort to attract youth into the Ministry via the Gathering the Next Generation project).

Research has also demonstrated that educating adolescents about a science-based career has a lasting impact on their career choices (Hirschi & Läge, 2008; Rogers & Creed, 2011; Shepard & Marshall, 1999; Tai et al., 2006).

The purpose of this study was to evaluate awareness about the profession of Audiology in a unique cross section of our society—adolescents from diverse ethnic backgrounds in secondary school settings in New York. The results of this study revealed that school-age adolescents' knowledge of Audiology was poor. Limited knowledge about Audiology as a profession among college students has been reported in previous works (Donai et al., 2013; Donai & Hood, 2018; Emanuel et al., 2012). Hence, the results of this study were hardly surprising. Specifically in this study, 74.34% of the participants were not familiar with what an audiologist does (the "no" group). Chi-square analysis indicated that the proportion of participants who were familiar with what an audiologist does was similar between Emanuel et al. (2012; data that they collected in 2009 with the largest sample size of $n = 1{,}077$) and this study. However, the proportion of participants who were categorized in the "yes" group in Donai et al. (2013; the most recent study published in a peer-reviewed journal, with a sample size of $n = 603$) was significantly greater than that in this study. Among the participants who reported that they were aware of what an audiologist does, a majority (71.79 %) were able to provide an appropriate definition of an audiologist's responsibilities. However, none of the participants mentioned "balance" in their responses. It is not surprising that, of the participants with self-reported awareness of "Yes, Definitely Know," 100% correctly defined what an audiologist did. Of this group, a majority (60%) had visited an audiologist. Every participant who had visited an audiologist reported that the minimum education requirement to become an audiologist is a doctoral degree. This indicates that an initial source of contact has a profound effect on knowledge regarding a profession (Baldwin, Woods, & Simmons, 2006).

The participants in this study also participated in an education program pertaining to the profession of Audiology, specifically information about the profession and the role of the audiologist, scope of practice, path to earning a doctoral degree in Audiology, requirements for licensure and certification, work settings, salary, and so forth. This information was based on data available on public platforms of professional bodies in Audiology as well as other websites such as the Bureau of Labor Statistics and *U.S. News & World Report*. The education program was conducted by

the author, assisted by graduate and undergraduate students in the Department of Communication Sciences and Disorders at St. John's University. Students and teachers participated actively and were invited to ask questions. Approximately one third (n = 50) of the participants were randomly selected to respond to the Audiology awareness survey after the education program. Thirty-one students returned completed postprogram surveys. Not only was there a statistically significant increase in knowledge about what an audiologist did compared to the pre-education program, but also all of the participants were extremely confident about their knowledge (all participants responded "Yes, Definitely Know" to the question). Additionally, terminologies such as "hearing aids," "cochlear implants," and "balance" were part of their descriptive responses. Prior to the educational program, even participants who correctly reported what an audiologist does did not use these terms in their descriptions. After the program, there was a statistically significant increase in the proportion of participants who reported that they were aware that balance testing or treatment is within an audiologist's scope of practice.

It is interesting to report that school authorities and participants reported that they found the educational program very helpful and liked that they could interact with an Audiology professor (author of the article) and Audiology aspirants (St. John's University students who assisted the author). Several students reported that, as they plan for college, they will definitely consider a degree in speech-language-hearing sciences and would be extremely interested in Audiology. The teachers reported that a program of this nature and an opportunity to interact with university students were invaluable (personal communication, K. B., 2018). One high school student worked with the author and her undergraduate research mentee on an Audiology research project for 3 months in the summer of 2018 and applied to the Regeneron Science Talent Search program (https://student.societyforscience.org/regeneron-sts). The overall enthusiasm to learn more about the profession of Audiology was palpable and encouraging. Baldwin and Agho (2003) studied student recruitment in allied health programs and reported that most participants (n = 1,809) in their study decided about a career in allied health sciences at an early age and that students were more inclined to choose a career path if they were encouraged to do so by a practitioner or professional in the specific allied health profession (instead of simply being provided relevant information about an allied health career option by a school counselor).

College education is becoming a priority for secondary school students since they and/or their families understand that the economic payoffs of college education far exceed those of high school education alone (Carnevale, Cheah, & Rose, 2011; Engle, 2007). Knowledge about Audiology could help attract a talented pool of youth to consider the communication sciences and disorders/speech-language-hearing sciences major in college and the profession of Audiology as a future career option, instead of "stumbling" upon Audiology while in college (Donai et al., 2013; Donai & Hood, 2018; Emanuel et al., 2012).

Bennett and Steiger (2010) reported that approximately 44% of doctor of audiology (AuD) students expressed some doubt about their career choice in Audiology. This staggering percentage depicting dissatisfaction and doubt, reported by Bennett and Steiger, is higher compared to that in a previous study that asked a similar question (Doyle & Freeman, 2002). Twenty percent of AuD students expressed dissatisfaction with their career choice in the study by Doyle and Freeman (2002). Surprisingly, the percentage reported in the Bennett and Steiger (2010) study is also higher than the dissatisfaction expressed by individuals in master's programs in Audiology, which was about 34% (Doyle & Freeman, 2002).

National aggregate data reported in the Communication Sciences and Disorders Education Survey (Council of Academic Programs in Communication Sciences and Disorders & American Speech-Language-Hearing Association, 2016) indicated that, in 2015–2016, the student capacity for admission into AuD programs was 874, out of which 793 (90.73%) were enrolled. However, 697 students graduated (87.89%). Similar trends were observed in 2016–2017 and 2017–2018. In 2016–2017 (Council of Academic Programs in Communication Sciences and Disorders & American Speech-Language-Hearing Association, 2017), out of the 797 first-year AuD students enrolled, 689 were awarded the degree (86.44%), whereas in 2017–2018 (Council of Academic Programs in Communication Sciences and Disorders & American Speech-Language-Hearing Association, 2018), out of the 759 first-year students enrolled, 656 graduated (86.42%) from AuD programs. These numbers indicate approximately 12%–13% of dropout or loss of the potential AuD workforce. While the reasons for the loss are unknown, it is likely that such dropout prior to graduation is attributable to doubt, dissatisfaction, or a general misalignment or lack of fit between the students' goals or preparedness and academic or professional expectations. The present study can be conceptualized as an early identification or intervention program offered to a diverse group of adolescents in order to make this future generation knowledgeable about Audiology. Perhaps, such knowledge early on, even before students enroll into baccalaureate programs, could help them think if they are a "fit" for Audiology and if Audiology is a "fit" for their career goals and aspirations. Students who do think they might want to aspire to become audiologists could take steps such as seeking out opportunities that will widen their breadth of experiences. Examples include starting a conversation about Audiology with a parent or counselor, registering for relevant courses in high school or college (physics, math, human biology), volunteering with or shadowing an audiologist or a researcher, touring a university and shadowing an Audiology or a communication sciences and disorders class, following Audiology-related content via social media, and seeking mentorship opportunities as early as possible, thereby investing in their education. Such an attempt at early education about Audiology has other benefits: (a) The additional time gained by students will hopefully prevent them from enrolling in an Audiology program

if it is inconsistent with their career or life goals, thereby minimizing dissatisfaction and dropouts while enrolled in an AuD program or upon graduation; (b) even if Audiology is not a potential career choice, adolescents will be equipped to practice healthy hearing and will know the "go to" professional in case of hearing/balance-related problems for themselves as well as their family and friends; and (c) as avid users of social media and technology, the younger generation could propagate a wave of change with respect to their knowledge about hearing health care (Deshpande, Deshpande, & O'Brien, 2018, 2019; Deshpande, Deshpande, O'Brien, & McMonagle, 2019).

Additionally, the national aggregate data reported in the Communication Sciences and Disorders Education Survey also indicated that, in 2017–2018, only 7.7% of (compared to 12% in 2016–2017) admitted students were males, and 13.11% of admitted students were of a racial ethnic minority. It is difficult to predict at this time, but early knowledge about Audiology and the role of audiologists could attract relatively equal numbers of males and females to consider it as a profession. This could help alleviate the gender gap in our profession. On similar lines, culturally diverse talent could be sought to serve our culturally and linguistically diverse population (Bellon-Harn & Weinbaum, 2017).

This study calls for a collaborative effort between audiologists, professional Audiology bodies, Audiology programs, school-based educators, the health care industry leaders, policy makers, and other stakeholders to seek innovative solutions and carve out a lasting change in improving Audiology's growth.

Limitations and Future Directions

This study was conducted on a relatively small sample of adolescents in New York. Its goal was to improve the visibility of Audiology through an education program. Adolescents were provided with an opportunity to directly communicate with an audiologist and Audiology students or aspirants. Participants' knowledge about Audiology improved immediately after the education program in roughly one third of the participants, and the gains were also maintained 6 months later. Future longitudinal studies that assess if knowledge is retained long-term and the influence of such programs on participants' academic or career choices could be extremely valuable.

Acknowledgments

This research was funded via three grants to Shruti Balvalli Deshpande: (1) Academic Service Learning Mini-Grant from St. John's University; (2) Richard and Camille Sinatra Endowment Grant from St. John's University; and (3) A grant from "30,000 Degrees: College Readiness for a Stronger Staten Island." The author would like to thank Yue (Angela) Zhuo for her assistance with the statistical analysis. Lastly, this article greatly benefited from the constructive feedback of two anonymous reviewers. The author is grateful to them.

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Appendix

Audiology Awareness Survey

_____

1. Age: _____
2. Gender: _____
3. Ethnicity:
   Caucasian
   African American
   American Indian
   Hispanic
   Asian/Pacific Islander
4. Do you know what an audiologist does? (Choose the ONE that best describes your level of knowledge)
   Yes, Definitely Know
   Rather Sure
   Somewhat Sure
   Not Sure
   No, Definitely Not
5. How did you first learn about the profession of Audiology?
   TV/Radio
   Internet
   Friend/Family
   Health Fair
   Career Fair
   School
   Counselor
   Don't know
   Other
6. When did you learn about the profession of Audiology?
   Elementary School
   Middle School
   High School
   Other
   I Don't Know
7. Have you ever been seen by an audiologist and/or accompanied someone to be seen by an audiologist?
   Yes
   No
8. What do you think is the minimum education requirement to become a licensed/certified audiologist?
   High School Diploma
   Bachelor's Degree
   Master's Degree
   Doctoral Degree
   Don't Know
9. Briefly state what you think an audiologist does.