Analysis of Speech Language Pathologists Graduates' Level of Knowledge and Confidence in

Providing Services to Individuals with Autism Spectrum Disorder (ASD)

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Abstract

American Speech-Language-Hearing Association (ASHA) requires licensed Speech Language Pathologists to provide services to individuals only in areas of competence. Providing services to individuals with ASD is within the scope of a Speech Language Pathologist's practice. The purpose of this study was to determine the level of academic preparation confidence provided by the University of Connecticut's Speech Language Pathology Program to all graduated students over the last five years. A survey was sent out to all University of Connecticut Speech Language Pathology graduates from the past five years to assess level of confidence on general ASD knowledge, assessment and treatment of ASD, and interprofessional practice. Results suggested that the University's graduates generally feel prepared to provide services to people with ASD, with a few areas of weakness. Reported areas of academic preparation weakness included understanding sensory and feeding challenges of individuals with ASD, the assessment process of ASD, and applying cultural and linguistic considerations during treatment of individuals with ASD. Overall, students reported feeling well prepared in general knowledge of ASD, treatment of ASD, and interprofessional practice SLP service expectations for individuals with ASD.

ASHA upholds standards that all practicing speech language pathologists must follow: individuals' welfare must be held paramount, and speech language pathologists must provide services only in areas of competence gained through education, training, and experience (American Speech-Language-Hearing Association [ASHA], 2016). Speech language pathologists must strive to obtain the highest level of professional competence and execute comprehensive services. This includes ensuring that services provided do not misrepresent research pertaining to best screening, assessment, and intervention practices. In advocating for clients, the speech language pathologist must provide information that is accurate pertaining to intervention, management, and research on communication disorders. ASHA clearly states that speech language pathologists must not engage in misrepresentation or client negligence (ASHA, 2004).

ASHA's code of ethics guidelines set high standards for speech language pathologists' level of knowledge and competence within their scope of practice. Providing services to individuals with autism spectrum disorder (ASD) is within the scope of practice of speech language pathology. Individuals with an ASD diagnosis may be accompanied with communication and social skill deficits. Communication barriers include echolalia, minimal language, and use of challenging behaviors for communicative purposes. Social deficits include difficulty sharing attention to an object, turn taking, and understanding emotions (ASHA, n.d.). The speech language pathologist must be knowledgeable to communicative and social deficits often experienced by individuals with ASD. Speech language pathology graduate programs are tasked with the job of ensuring that graduating students are knowledgeable and competent to provide services to this population. It is up to the individual to maintain knowledge on the topic via continuing education and work experience.

A lack of speech pathologist knowledge on providing services to individuals with ASD has been documented in literature. Cascella and Colella (2004) documented that practicing Connecticut speech language pathologists reported minimal education or clinical preparation on providing services to individuals with ASD. Furthermore, they found that there has been no change in how students have been trained on the topic in the past thirty years. The study reported that the level of knowledge on basic ASD characteristics was stronger than the level of knowledge on providing assessment and intervention services to individuals with ASD based on the pooled sample of Connecticut speech language pathologists (Cascella & Colella, 2004). Plumb and Plexico (2013) compared the level of coursework on ASD between recent speech language pathology graduate students and graduates prior to 2006. They found that while coursework pertaining to ASD had increased, the level of confidence in courseling and performing intervention services regarding social communication, academics, and literacy had decreased. Plumb and Plexico (2013) demonstrate that experience may be correlated to confidence. The study highlights the importance that graduate school education programs include hands on, clinical experiences within their programs.

Level of knowledge in treating ASD varies across disciplines. Bono et al. (2021) found that trainees from Leadership Education in Neurodevelopmental and Related Disabilities (LEND) have differing levels of knowledge on ASD, depending on their field of discipline. The study found that psychology students had the greatest level of knowledge when compared to other disciplines including physical therapy, occupational therapy, social work, and non-clinical disciplines. The study does not mention the level of knowledge on ASD of speech-language pathology graduate students. Other studies have supported a lack of knowledge and preparation in providing services to individuals with ASD. Beverly and Mathews (2020) found that only 50% of sampled speech language pathologists were able to identify ASD defining criteria. The aim of this study is to obtain a better understanding of how well educated and confident individuals in the field of speech language pathology are in providing services to individuals with ASD. This study aims to examine the level of confidence of graduated University of Connecticut speech language pathology students and the level of education provided by the University on providing services to individuals with ASD. It is the speech language pathologist's responsibility to ensure that services within one's scope of practice are of high quality and that services are based on knowledgeable information that is accurate. The client's welfare is the number one priority and failure to provide high quality services to individuals with ASD represents negligence, which ASHA defines as the breaching of a duty to another individual, such as lack of care or action, resulting in harm to the individual (ASHA, 2016).

The Current Study

The study explores the level of confidence of well-educated graduate speech language pathology students in providing services to individuals with an ASD diagnosis. The study utilizes a survey utilizing Qualtrics XM programming that aims to capture general knowledge on providing services to individuals with ASD, as well as more specific questions pertaining to assessment, treatment, and interdisciplinary practice involving services for individuals with ASD. Survey responses will provide information on whether practicing speech language pathologists have the level of knowledge and confidence to effectively provide services to individuals with autism. This includes knowledge obtained through graduate school coursework and clinical practicum experience, as well as gained knowledge from working within the profession. The study aims to:

a.) Determine whether students felt confident with the level of preparation provided by the University of Connecticut on providing services to individuals with ASD.

b.) Determine where students felt less confident and require further training in providing services to individuals with ASD (i.e., general knowledge, assessment, treatment, interdisciplinary practice).

Methods

Qualtrics XM, a survey platform, was used to create an online survey. An online survey was preferred to mailed survey in order to maximize participant response rate, confidentiality, and to limit response wait time. The survey consisted of twenty four questions and required approximately 10 minutes to complete.

Participants

The survey targeted all graduate Speech Language Pathology Students from the University of Connecticut over the last five years. The University's graduating class of 2021 included 18 graduate students. Therefore, an estimated 75-90 individuals received an invitation to participate in the study. All UConn graduate students were provided a University email address upon enrollment to the University. Recruitment information for participation in the study was mailed directly to the Program Manager of the Speech Language Pathology Department at the University of Connecticut. The program manager forwarded the recruitment information to the University email addresses on file for all graduate students from the University's Speech Language Pathology Program from the last five years. The email included recruitment information, a link to the survey, and an information sheet detailing the purpose of the study, participant requirements, risks and benefits of participating, ensuring confidentiality, and who to contact with any study questions or concerns. All participants were asked if they agreed to participate in the study prior to beginning the survey.

Measures

Participants were asked to complete an online survey consisting of 24 total questions. The start of the survey consisted of general demographic questions. The remainder of the survey was divided into three components targeting general knowledge pertaining to ASD, assessment and treatment of ASD, and interdisciplinary practice. The questions within each component of the study were randomized on the survey given to the participants.

The general demographics component of the survey consisted of 10 questions. These included yes/no, open ended, and multiple-choice questions. This section contained questions pertaining to employment, licensure, continuing education, and number of years passed since graduation. Employment questions included work setting, caseload size, number of individuals with ASD on caseload, and interdisciplinary teamwork.

The general knowledge, assessment, and treatment of ASD, and interdisciplinary practice components of the survey utilized a five-point scale rating. The ratings included: very good, good, unsure, limited, very limited. This rating was kept consistent through the remainder of the survey to reduce participant confusion. Each question began with the following prompt: "How confident do you feel your graduate training prepared you to have background knowledge in the following areas". The general knowledge questions prompted participants to rate their confidence that University of Connecticut's Speech Language Pathology Department adequately prepared them with knowledge of the signs and symptoms of ASD, potential causes of ASD, behavioral and emotional challenges of ASD, and sensory and feeding challenges of ASD. The assessment and treatment questions prompted participants to rate their educational preparation confidence of the assessment process, the role of the SLP in the diagnosis process, treatment modes and modalities, family centered practice, cultural and linguistic considerations, and treatment approaches for individuals with ASD. The interdisciplinary practice questions prompted participants to rate their confidence in their ability to collaborate as part of a service team for working with individuals with ASD, understanding the leadership roles that the SLP plays in working as part of a service delivery team, and how to work with team members to effect positive change. See Appendix A to view the survey sent to participants.

Procedure

The final version of the survey was emailed to the University of Connecticut's Speech Language Pathology Program Manager and forwarded to the program graduates of the last five years on June 22, 2021. A total of 10 participants completed the survey. Four of the participants were excluded from research analysis due to incomplete surveys or unusable data. The small number of respondents was expected given the small class sizes of the University of Connecticut's Speech Language Pathology program.

General Participant Information

All survey participants reported they were currently employed and practicing as a speech language pathologist and certified by ASHA. All participants reported having individuals with ASD on their caseload. Work settings included medical facilities, elementary schools, and high schools. Sixty-seven percent of participants reported working in an elementary school setting, 16.7% reported working in a high school setting, and 16.7% reported working in a medical facility. Caseload sizes ranged from 3 to 100 individuals, with people with ASD accounting for between 6.9% to 87% of the caseload. The average caseload size was reported to be approximately 43 individuals. The median caseload size was found to be 39 individuals. Individuals with ASD accounted for an average of 35.8% of the caseload size and a median of approximately 18 individuals. Approximately 67% of participants reported receiving specialized training in working with individuals with ASD. When the participants were prompted on whether they received continuing education credits (CEU) related to individuals with ASD, approximately 67% confirmed they had received continuing education credits on the topic. Approximately 83% of participants reported working in a part of an interdisciplinary team in treating individuals with ASD. The average number of years since the participants graduated with their master's degree was found to be approximately 2.6 years with a range of 2-5 years and median of 2 years. Table 1, Table 2, and Table 3 summarize general patient demographic information.

Perceptions of General Knowledge

Participants were asked four questions targeting general knowledge of ASD. About 83.3% of participants reported very good graduate training preparation confidence in ability to identify the signs and symptoms of ASD with no participants rating their preparation confidence less than good. Participants rated graduate training preparation confidence in identifying the causes of ASD. Many study participants (66.7%) reported good training preparation with 16.7% rating their preparation as very good and another 16.7% rating their preparation confidence as unsure. All participants reported a high level of preparation confidence in identifying behavioral and emotional challenges that individuals with ASD may face. Approximately 66.7% of participants reported good preparation confidence and 33.3% reported very good preparation confidence. Participants reported low levels of preparation confidence in understanding sensory and feeding challenges that individuals with ASD may face. Only 16.7% of participants rated their level of preparation confidence as good, and 83.3% of participants rating their preparation confidence as unsure, limited, or very limited. This information indicates that a high percentage of individuals graduating from the University of Connecticut's Speech Language Pathology Program are very confident in their knowledge of general ASD knowledge. The only deficits in knowledge were found to be in the education of sensory and feeding challenges of individuals with ASD. Table 4 breaks down participant response ratings across all general ASD knowledge questions.

Perceptions of Assessment/Treatment

Participants were asked six questions regarding their confidence in their graduate training preparation in the assessment and treatment of ASD. Participants reported mixed levels of

confidence in the assessment process of ASD. While 66.6% of participants reported a preparation confidence of very good and good, 33.3% of participants reported unsure or limited preparation confidence. A very high percentage of participants, approximately 83.3%, reported having good or very good academic preparation on the role of the SLP in the diagnosis of ASD and only 16.7% felt unsure about their level of knowledge on the topic. All participants felt confident about the different treatment modes and modalities for ASD with all participants reporting at least a good level of graduate training preparation confidence. Similarly, all participants felt very confident in family centered practice in the treatment of ASD with no individuals reporting unsure, limited, or very limited knowledge. Participants reported mixed findings on academic preparation of the cultural and linguistic considerations to make during treatment of ASD. A total of 33.7% of participants rated their academic preparation as unsure on the topic. Meanwhile, another 33.3% of participants reported the level of academic preparation confidence of the topic as good. All participants reported high levels of academic preparation confidence on the different treatment approaches for individuals with ASD, including ABA and PECS. Approximately 83.3% of participants reported a good level of academic preparation confidence on the topic. This information demonstrates that graduates of the University of Connecticut's Speech Language Pathology Program felt adequately prepared in the assessment and treatment of individuals with ASD. Areas that should be further targeted include cultural and linguistic treatment considerations when providing services to individuals with ASD.

Perceptions of Interdisciplinary Practice

The participants were asked three questions pertaining to training preparation confidence in interdisciplinary practice involving services for ASD. All participants reported very good or good academic preparation confidence in collaborating as part of a service team working with individuals with ASD. The majority of the participants (66.7%) reported good preparation confidence in understanding the leadership roles that SLP's play in working as part of a delivery team. A total of 16.7% of participants reported very good training preparation on the topic, while another 16.7% reported that they were unsure of the leadership roles that the SLP plays as part of a service delivery time. While 66.7% of participants reported good or very good academic preparation confidence in working with team members to effect positive change, 33.3% of participants reported feeling unsure about their academic preparation on the topic. This information indicates that graduates from the University of Connecticut felt adequately prepared to partake in interdisciplinary practice involving services for individuals with ASD. An area to further target in future educational coursework or clinical placements is how to work with team members to effect positive change due to the mixed academic preparation confidence reported by the study participants.

Study Limitations

While the study was helpful in determining areas of strength and weakness of academic preparation confidence of a graduate school speech language pathology program, the study does have several limitations that need to be addressed. The study examined only one speech language pathology graduate school program in Connecticut. This does not accurately reflect the level of academic preparation confidence provided to the students by other universities. Other programs may be more or less effective in educating and training students for future practice. This issue can be addressed in future research by including speech language pathology graduates from other Universities.

Second, the chosen university has a small graduating population with the latest graduating class composed of only 18 students. Due to the small number of students per graduating class, the number of expected survey responses were innately limited. The best way to address this issue is to expand the survey so that more graduating classes can participate, include more universities in the study, or target a university with larger class sizes.

Another study limitation is the limited information gathered on study participants. Participants were asked if they received training or continuing education credits beyond graduate school on providing services to individuals with ASD and a percentage was calculated. This study does not capture how much of this training influenced participant responses. In other words, the participant responses may indicate that the university provided high quality training preparation, however training was truly acquired through further experiences apart from graduate school. Therefore, it is difficult to gauge the level of influence that post-graduate ASD training had on survey responses. These limitations restrict the level of confidence in this research project. Nonetheless, this study provides baseline information pertaining to the level of confidence in providing services to people with ASD acquired through graduate school preparation.

Based on the data collected from this study, areas of strength and weakness in preparation confidence have been identified. Areas of strength include general knowledge of ASD, treatment of ASD, and interprofessional practice SLP service expectations for individuals with ASD. Areas

of weakness identified in this study include understanding sensory and feeding challenges of individuals with ASD, the assessment process of ASD, and applying cultural and linguistic considerations during treatment of individuals with ASD. This information can be transformative for University programs as they continue to educate graduate students in the area of speech language pathology. University programs can identify areas of weakness and take proactive actions to improve student preparation confidence. For instance, University programs can set up learning workshops, create group projects, communicate areas of deficits with clinical placement sites, and include further training through clinic experiences or coursework. These actions will serve to increase graduate students' preparation confidence when providing speech services to individuals with ASD.

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APPENDIX A

Survey General Demographic Questions

Are you currently employed as an SLP? Y/N

 What is your work setting?
 B-3 _____
 Preschool _____
 Elementary School _____
 Middle School _____

 High School _____
 Medical Facility _____
 Private Practice _____
 Specialized School _____
 NA _____

What is your current caseload size?

Do you have individuals with ASD on your caseload? Y/N

If yes, how many individuals have the diagnosis of ASD?

Do you have specialized training in working with individuals with ASD? Y/N

Have you received continuing education credits (CEU) related to individuals with ASD? Y/N

Do you work as part of an interdisciplinary team in treating individuals with ASD? Y/N

How long since you graduated with your Master's degree?

Are you certified by ASHA? Y/N

Factor 1: General Knowledge Questions

How confident do you feel your graduate training prepared you to have background knowledge in the following areas: Signs and symptoms of ASD?

very good good unsure limited very limited

How confident do you feel your graduate training prepared you to have background knowledge in the following areas: Potential causes of ASD?

very good good unsure limited very limited

How confident do you feel your graduate training prepared you to have background knowledge in the following areas: Behavioral and emotional challenges of ASD?

very good good unsure limited very limited

How confident do you feel your graduate training prepared you to have background knowledge in the following areas: Sensory and feeding challenges of ASD?

very good good unsure limited very limited

Factor 2: Assessment/Treatment Questions

How confident do you feel your graduate training prepared you to have background knowledge in the following areas: Assessment process for ASD?

very good good unsure limited very limited

How confident do you feel your graduate training prepared you to have background knowledge in the following areas: Role of the SLP in the diagnosis of ASD?

very good good unsure limited very limited

How confident do you feel your graduate training prepared you to have background knowledge in the following areas: Treatment modes and modalities (e.g., oral language, AAC) for ASD?

very good good unsure limited very limited

How confident do you feel your graduate training prepared you to have background knowledge in the following areas: Family-centered practice in treatment of ASD?

very good	good	unsure	limited	very limited	
How confident do you feel your graduate training prepared you to have background knowledge in the following areas: Cultural and/or linguistic considerations in treatment of ASD?					
very good	good	unsure	limited	very limited	
5	, ,	• •	1 5	have background knowledge or individuals with ASD?	
very good	good	unsure	limited	very limited	
Factor 3: Interdisci	plinary Practic	e Questions			
-				have background knowledge working with individuals with	
very good	good	unsure	limited	very limited	
How confident do you feel your graduate training prepared you to have background knowledge in the following areas: Leadership roles that SLPs play in working as part of a service delivery team?					
very good	good	unsure	limited	very limited	
How confident do you feel your graduate training prepared you to have background knowledge in the following areas: How to work with team members to effect positive change?					
very good	good	unsure	limited	very limited	
APPENDIX B					
Table 1					

Participant Caseload Information

Caseload Questions	Average	Range	Median
Caseload Size	43 individuals	3-100 individuals	39 individuals
Individuals with ASD on Caseload	35.8%	6.9-87%	18 individuals

Note. The average caseload size included 43 individuals with a median of 39 people. Individuals

with ASD made up an average of 35.8% of the caseload with a median of 18 individuals with

ASD,

Table 2

Participant Characteristics

General Participant Questions	Percentage (%)
Received Specialized Training on ASD	67%
Completed Continuing Education Credits (CEU) on ASD	67%
Participated in Interdisciplinary Teamwork	83%
Certified by ASHA	100%
Working with Individuals with ASD	100%

Note. The participants were asked general background information pertaining to specialized training, education, certification, interdisciplinary work, and work experience. All participants reported having ASHA certification and experience working with individuals with ASD. Eighty three percent of participants reported participating in interdisciplinary teamwork. Sixty seven percent of participants reported receiving specialized training on ASD. Similarly, sixty seven percent reported completing Continuing Education Credits (CEU) on ASD.

Table 3

Participant Employment Setting Percentages

Employment Setting	Percentage (%)
Elementary School	66.7%
High School	16.7%
Medical Facility	16.7%

Note. The elementary school was the most common employment setting reported by study

participants. An equal number of participants reporting working in a high school or medical

facility.

Table 4

<u>Question</u>	<u>Very Good</u>	<u>Good</u>	<u>Unsure</u>	Limited	Very Limited
Signs and symptoms of ASD?	83.3%	16.7%	0%	0%	0%
Causes of ASD?	16.7%	66.7%	16.7%	0%	0%
Behavioral and emotional Challenges	33.3%	66.7%	0%	0%	0%
Sensory and Feeding Challenges	0%	16.7%	33.3%	33.3%	16.7%

Graduate Training Preparation Confidence in General ASD Knowledge

Note. The table above breaks down participant preparation confidence in general ASD

knowledge based on a five-point Likert scale. All participants reported very good or good preparation confidence in identifying signs and symptoms of ASD. Participants reported notably less preparation confidence in understanding sensory and feeding challenges associated with ASD.

Table 5

Question	<u>Very Good</u>	<u>Good</u>	<u>Unsure</u>	Limited	Very Limited
Assessment Process for ASD?	33.3%	33.3%	16.7%	16.7%	0/%
Role of the SLP in the diagnosis of ASD?	16.7%	66.7%	16.7%	0%	0%
Treatment Modes and Modalities for ASD?	50%	50%	0%	0%	0%
Family Centered Practice in treatment of ASD?	16.7%	83.3%	0%	0%	0%
Cultural and/ or linguistic considerations in treatment of ASD?	16.7%	33.3%	33.3%	16.7%	0%
Treatment approaches (e.g, ABA, PECS) for individuals with ASD	16.7%	83.3%	0%	0%	0%

Graduate Training Preparation Confidence in Assessment and Treatment of ASD

Note. The table above breaks down participant preparation confidence in assessment and treatment of ASD based on a five-point Likert scale. All participants reported very good or good preparation confidence on family centered practices in treatment of ASD, treatment modes, and approaches for individuals with ASD, Participant reported notably different level of preparation

confidence in knowledge of cultural or linguistic considerations in treatment of ASD and the assessment process for ASD.

Table 6

Graduate Training Preparation Confidence in Interdisciplinary Practice Involving Services for

Question	<u>Very Good</u>	<u>Good</u>	<u>Unsure</u>	Limited	Very Limited
Collaboration as part of a service team for working with individuals with ASD?	33.3%	66.7%	0%	0%	0%
Leadership roles that SLPs play in working as part of a service delivery team?	16.7%	66.7%	16.7%	0%	0%
How to work with team members to effect positive change?	50%	16.7%	33.3%	0%	0%

Individuals with ASD

Note. Participant reported level of confidence in interdisciplinary practice based on a five-point

Likert scale. All participants reported high level of preparation confidence in collaborating as part of a service team for working with individuals with ASD.