Speech-Language Pathologist and Graduate Student Perceived Self-Efficacy in Providing Services to Individuals Who Are Transgender

By

Ashley Wolosek

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

Master of Science Communication Sciences and Disorders

Speech-Language Pathology

At

The University of Wisconsin- Eau Claire

April 29th, 2020
Graduate Studies

The members of the Committee approve the thesis of

Ashley Wolosek presented on April 29th, 2020

__________________________________________________
Abby Hemmerich, Ph.D., CCC-SLP, Chair

__________________________________________________
Kathryn Muller, Ph.D., CCC-SLP

__________________________________________________
Jeffery Goodman, Ph.D.

APPROVED: _______________________________
Darrell Newton, Ph.D., Dean of Graduate Studies
ABSTRACT

Purpose: Speech-language pathologists (SLPs) express hesitation when working with clients who are transgender, although the underlying reason is currently unclear. Educational and clinical experiences, or lack thereof, with the transgender population may contribute to this hesitation and impact the quality of service delivery. To address the shortcomings in the literature related to service delivery practices, as well as knowledge about best practices and self-efficacy, a survey of graduate students and SLPs nationwide was completed.
Methods: A survey was created to include self-efficacy measures, knowledge ratings about transgender services, and two validated surveys, the AATMW and SE-12. Data were analyzed using independent sample t-tests, a regression analysis, frequency counts, and qualitative analysis.

Results: Practicing speech-language pathologists had greater perceived self-efficacy, less bias, knew about and provided a variety of evidence-based services, and served multiple transgender clients compared to their graduate student counterparts. At the same time, graduate students knew about and provided a variety of evidence based-services, even though they served fewer transgender clients.

Conclusion: This study provides a starting point for future research regarding how knowledge, experience, and soft skills impact service delivery for those who are transgender.
# TABLE OF CONTENTS

LIST OF TABLES .............................................................................................. vii
LIST OF FIGURES ............................................................................................ viii

CHAPTER 1: LITERATURE REVIEW ................................................................. 1
  Introduction ................................................................................................. 1
  Transgenderism and Transitioning ............................................................... 2
  Speech Overview .......................................................................................... 5
  A Comprehensive Assessment for Transgender Populations ..................... 7
  Outcomes of an Evaluation Related to Treatment ....................................... 10
  Intervention ................................................................................................. 11
    Vocal Hygiene ............................................................................................. 12
    Fundamental Frequency/Pitch ..................................................................... 12
    Prosody ..................................................................................................... 13
    Endurance & Breath Support ..................................................................... 14
    Increasing Breathiness .............................................................................. 15
    Articulation ............................................................................................... 15
    Forward Focus ............................................................................................ 16
    Resonance ................................................................................................. 17
    Pragmatics ................................................................................................. 17
    Counseling ................................................................................................. 19
  Development of Clinical Knowledge and Skills .......................................... 19
  Overview of How Self-Efficacy Develops ................................................... 22
  Origins of the Profession and Graduate Programs ..................................... 25
  Graduate Student Experiences and Training .............................................. 28
  Development of Graduate Student Clinician Self-efficacy ......................... 31
  Research Questions ...................................................................................... 34

CHAPTER 2: METHODS .................................................................................... 35
  Design .......................................................................................................... 35
  Participants ................................................................................................. 35
  Survey Instrument ....................................................................................... 39
  Qualitative Data Analysis .......................................................................... 42
  Quantitative Data Analysis ........................................................................ 42

CHAPTER 3: RESULTS ...................................................................................... 44
  RQ #1 .......................................................................................................... 44
  RQ #2 .......................................................................................................... 47
  RQ #3 .......................................................................................................... 51
  RQ #4 .......................................................................................................... 55
  RQ #5 .......................................................................................................... 58
  RQ #6 .......................................................................................................... 60

CHAPTER 4: DISCUSSION ............................................................................... 62
# LIST OF TABLES

Table 1: Demographic Data for Participants Who Were Graduate Students and Practicing Speech-language Pathologists

Table 2: Clinical Experiences Reported by Graduate Students and Practicing Speech-language Pathologists

Table 3: Means and standard deviations for SE-12 and TGSE for SLPs and graduate students

Table 4: SLP and Graduate Student Familiarity with Evidence-based Areas of Service

Table 5: Assessment Techniques Reported by SLPs and Graduate Students

Table 6: Treatment Techniques Reported by SLPs and Graduate Students

Table 7: Frequency of Assessment Techniques with Practicing SLPs and Graduate Students

Table 8: Undergraduate and Graduate Training Opportunities Reported by SLPs and Graduate Students

Table 9: Recommendations and Exemplars of Potential Graduate Program Improvements
LIST OF FIGURES

Figure 1. SE-12 Scores for SLPs and Graduate Students ..........................................................45
Figure 2. Transgender Services Self-Efficacy Scores for SLPs and Graduate Students ..........................................................46
Figure 3. Familiarity with Treatment Approaches ........................................................................48
Figure 4. Assessment Services Provided by Graduate Students and SLPs Across Broad Areas ........................................................................53
Figure 5. Treatment Services Provided by graduate students and SLPs Across Broad Areas ........................................................................54
Figure 6. Techniques used by SLPs and Graduate Students ........................................................55
Figure 7. Sources of knowledge for SLPs and Graduate Students ................................................57
Figure 8. Likelihood to Seek Out New Information Across Source Types ..................................................58
Figure 9. What Graduate Programs Could Do Differently ..........................................................59
Figure 10. AATMW Scores ...........................................................................................................61
DEDICATION

This project likely wouldn’t exist today without a guest speaker during my undergraduate voice lecture. She was undergoing the transition process from male to female. She was raw and honest about her employer’s rejection, her low self-esteem, and less than friendly interactions with medical professionals. Yet, she spoke so fondly of the on-campus clinic and disposition of the clinicians she worked with. Hearing her story helped me examine my implicit biases, skills, knowledge, and self-efficacy in the area of transgender communication. She is the inspiration that helps me better understand health care disparities facing individuals who are transgender, the importance of patient-centered care, and the need to create clinical opportunities for graduate students who will be next to serve in a growing culturally and linguistically diverse world. It is with the warmest regard that this work is dedicated to her.
ACKNOWLEDGEMENTS

This following research study is a product of collaboration from professionals across academic disciplines.

First, I would like to acknowledge and thank the members of my thesis committee: Dr. Abby Hemmerich, Dr. Kathryn Mueller, and Dr. Jeffrey Goodman. Dr. Hemmerich provided insight related to research methodology, current practices related to transgender treatment and assessment, survey construction, and being my second pair of eyes throughout the editing process. She was an unwavering support system and collaborative partner from start to finish. I wish to thank Dr. Mueller for providing input on the thesis manuscript as it relates to research and clinical practice, to improve its integrity and execution. I also wish to thank Dr. Goodman for his patience, mini impromptu statistics lessons, and implementation of feedback during the conduction of research methods and process of statistical analyses through the lens of a social psychologist. Together, their efforts guided this research to become a clinically and socially valuable resource for practicing Speech-Language Pathologists and graduate students working to become culturally competent and confident clinicians to provide the highest quality of care to those in the transgender community.
Next, I would like to thank Ms. Rebecca Jarzynski, for her access and willingness to post the online survey to ASHA SIG 14: Cultural and Linguistic Diversity. In addition, special thanks to Dr. Hemmerich for posting the survey on the Iowa voice list serv.

I would like to thank my research assistants, Hannah Fox and Sophia Pernsteiner. Together they put in countless hours coding qualitative responses which made the coding process more efficient. Their genuine interest in the project and attention to detail are greatly appreciated.

Next, I would like to extend a thank you to graduate coordinators across the country for distributing the online survey to prospective participants. Further, I would like to thank Elizabeth Savina, Theresa Richard, Laura Hurd for their permission to upload the online survey materials on their social media Facebook Pages to recruit participants.

Finally, I would like to extend my gratitude, to my family and friends for their unwavering love and encouragement. Their interest and willingness to proofread initial drafts and periodically check-in about the process allowed to me feel supported every step of the way. A special mention to my esteemed colleagues, Katie Spreitzer and Bailey Miller, who instilled motivation, provided resources, and kept me sane for the last two years.
CHAPTER 1
LITERATURE REVIEW

Introduction

In the seventh version of their Standards of Care, the World Professional Association for Transgender Health (WPATH) recognized that gender identity is unique to each person. Expression of one’s gender identity need not conform to solely a binary male/female designation. Those who identify as transgender experience a mismatch between their assigned gender at birth and their expressed gender. Therefore, healthcare to serve individuals who are transgender requires a number of different professionals, often including SLPs. The goal of the speech-language pathologist (SLP) is to help individuals who are transgender develop a voice and communicate their wants and needs in a way that reflects their inner self and their gender expression. While those who are transgender may reflect a small portion of SLP caseloads, the population is growing and is estimated to include approximately 1.4 million in the United States (Hoffman, 2016).

To better understand the communication needs and SLP roles with this growing population, Sawyer & Perry (2014) surveyed over 200 SLPs in Illinois to ask about their encounters and confidence in working with clients who are transgender. They found that the majority of SLPs had worked with clients who were transgender, but they weren’t confident in their service delivery. It is likely that more SLPs will be serving this population in the future, making it imperative that clinicians have the skills, knowledge, experience, and confidence to offer quality services. The purpose of this study is to examine perceived graduate student and SLP knowledge, skills, practices, and self-
efficacy in conducting communication assessment and treatment for transgender clients. In addition, we will explore whether other factors, such as personal attitudes or biases, lack of exposure to individuals who are transgender, or generally poor soft skills could impact service delivery to transgender clients. This literature review will be organized by discussing transgenderism, speech production as it relates to assessment and intervention for individuals who are transgender, graduate student experiences, training, and development of self-efficacy.

**Transgenderism and Transitioning**

In 1980, the American Psychiatric Association added gender identity disorder to *The Diagnostic and Statistical Manual Fourth Edition (DSM-IV)*. In the most recent edition (*DSM-V*), gender dysphoria has replaced gender identity disorder (“What is Gender Dysphoria”, n.d.). The change in terminology attempted to destigmatize transgender individuals from associations with mental illness. While controversial, the American Psychiatric Association believed the diagnostic label would allow individuals experiencing gender dysphoria to receive a diagnosis and increase their access to care. To receive a diagnosis of gender dysphoria the individual must meet adolescent or adult criteria outlined in the DSM-V, as described below.

According to the American Psychiatric Association, adults receiving a gender dysphoria diagnosis experience a difference between their expressed gender and assigned gender, leading to significant distress or problems functioning. It lasts at least six months and is shown by at least two of the following criteria (*DSM–V*; American Psychiatric Association, 2013):
1. A marked incongruence between one’s experienced/expressed gender and primary and/or secondary sex characteristics.

2. A strong desire to be rid of one’s primary and/or secondary sex characteristics

3. A strong desire for the primary and/or secondary sex characteristics of the other gender

4. A strong desire to be of the other gender

5. A strong desire to be treated as the other gender

6. A strong conviction that one has the typical feelings and reactions of the other gender

According to the DSM-V (2013), “In children, gender dysphoria diagnosis involves at least six of the following and an associated significant distress or impairment in function, lasting at least six months:”

1. A strong desire to be of the other gender or an insistence that one is the other gender

2. A strong preference for wearing clothes typical of the opposite gender

3. A strong preference for cross-gender roles in make-believe play or fantasy play

4. A strong preference for the toys, games or activities stereotypically used or engaged in by the other gender

5. A strong preference for playmates of the other gender

6. A strong rejection of toys, games and activities typical of one’s assigned gender

7. A strong dislike of one’s sexual anatomy
8. A strong desire for the physical sex characteristics that match one’s experienced gender

Of those who receive a diagnosis of gender dysphoria, most are transgender. Those who choose to undergo the transition process of male to female or female to male do so to “more closely align their internal knowledge of gender with its outward appearance” (“Sexual Orientation and Gender Identity Definitions”, n.d). The transition process can be complex and occurs over a long period of time. The process can include some or all of the following “personal, medical, and legal steps; telling one’s family, friends, and coworkers; using a different name or new pronouns; dressing differently; changing one’s name and/or sex on legal documents; hormone therapy; and possibly one or more types of surgery” (GLAAD Media Reference Guide, n.d.). Some individuals seek to change their body or anatomy and/or physiology. In the *Timeline of Gender Transition by NASW*, changing physiology can range from hormone consumption to sex reassignment surgery as an individual transitions from female-to-male (FTM) or male-to-female (MTF). For FTM, surgery can include a total hysterectomy, metoidioplasty, bilateral mastectomy, and phalloplasty. For MTF, surgery includes a vaginoplasty to construct female genitalia. Other surgical procedures can be utilized to address other body characteristics, such as facial feminization surgery to manipulate bone and soft tissue placement, breast augmentation, and thyroid cartilage reduction. It is important to note that not all individuals who are transgender desire to complete surgical procedures, but may prefer to choose less invasive methods of transition.
While the costs of these medical procedures prohibit many individuals from undergoing major changes like the sex reassignment surgery, alternative services, such as those provided by the speech-language pathologist, are often more affordable and easily accessible. A speech-language pathologist offers knowledge and skill in the prevention, assessment, and treatment of speech, language, cognitive, and swallowing disorders across the lifespan. In individuals who are transgender, an SLP may be able to address various aspects of communication to better match the client’s gender identity. These communication changes can include aspects of speech (e.g., sound pronunciation or articulation), voice (e.g. quality, pitch, and volume), and prosody (i.e., the stress and intonation of speech), as well as language (e.g., vocabulary) and pragmatics (i.e., social use of language).

**Speech Overview**

In order to discuss speech needs for individuals who are transgender, we will start with an overview of typical speech production. Producing speech that is clear and efficient requires the coordination of various systems. The larynx (i.e., the voicebox) sits superior to the trachea, posterior to the Adams Apple, and houses the vocal folds. To produce sound, the vocal folds within the larynx vibrate when they come together. The size/length of the vocal folds determines the rate of vibration (i.e., frequency) or pitch of sounds produced. Larger vocal folds produce lower pitches, typically associated with male speakers, while smaller vocal folds produce higher pitches, typically associated with female speakers. The vocal folds only create a buzzing noise as they vibrate and require the vocal tract to create intelligible speech.
The vocal tract and articulators include the pharynx, palate, lips, tongue, teeth, and cheeks. These structures manipulate the buzzing from the vocal folds through constrictions of the vocal tract. Different types of speech sounds are produced based on the degree and place of the constriction. For example, vowels tend to have a relatively open vocal tract, while consonants like stops (e.g., p, b, t, d) or fricatives (e.g., s, f, z) tend to have a highly constricted vocal tract. Although all speakers use generally the same configurations to make specific sounds, there are differences in the characteristics of those productions that relate to gender. Typically, male speakers have larger vocal tracts which contributes to the perception of a male speech characteristics. Conversely, female speakers have smaller vocal tracts which contributes to the perception of female speech characteristics. While general speech sound production is similar across genders, differences in the vocal tract relate to how an individual is perceived.

Individuals who are transgender experience a mismatch between their anatomical structures and their desired voice and speech characteristics. Those transitioning from FTM may have anatomical changes that occur due to hormone therapy or surgery. Specifically, male hormones (e.g. testosterone) cause the vocal folds to get larger which provides a major pitch change aiding in these individuals being perceived as male. Those transitioning from MTF have no way to alter their vocal fold size and must rely upon other methods for changing their voice. In addition, neither group can alter the size of the vocal tract, further contributing to the need for learned strategies for voice and speech changes.
A comprehensive Assessment for Transgender Populations

A comprehensive SLP assessment gathers information related to cognition, language (i.e., vocabulary, syntax, etc.), speech, voice, and pragmatics. In adults who are transgender, typically cognition and language functions are screened but not a focus, as these are expected to be within functional limits for the individual’s age and education. Historically, the main areas in which clients seek change are in speech and voice. However, SLPs can offer guidance in language and pragmatics and differences between genders as well. An assessment is designed to gather information across all communication areas to allow the client to make more informed decisions about changes s/he may want to make.

In individuals who are transgender, a comprehensive evaluation often begins with screening cognition and receptive and expressive language, followed by a more thorough evaluation of pragmatics, speech, and voice. Screening receptive and expressive language allows the clinician to evaluate the individual’s understanding and use of language and social skills. This may be done using an ethnographic interview, in which the SLP will build rapport with the client while informally gathering information about the individual's family, perceptions of themselves and society, their behaviors, values, etc. As it relates to expressive language, the SLP will listen for appropriate verb morphology, sentence complexity, and vocabulary. The SLP may also choose to collect a language sample to assess the individual's expressive language, if warranted. To informally assess receptive language, the SLP will gauge the individual's ability to follow
and respond appropriately to interview questions. It is unlikely an individual who is transgender seeking services would have deficits in these areas.

In individuals who are transgender, an evaluation of pragmatics and nonverbal communication is conducted often through informal observation during the interview. Pragmatics is a branch of linguistics that explores how language is used to communicate with others. Pragmatics are observed and compared against gender markers to potentially develop treatment goals to increase the likelihood that they will be perceived as their desired gender. According to Hancock & Garabedian (2013), pragmatic evaluation paired with non-verbal communication may address observing eye contact, using hand gestures, facial expressions, posture, and head nodding. While some research exists on gender differences in language use and vocabulary, these data are interpreted with caution because they are dependent upon context and culture.

When evaluating the speech production of a client who is transgender, it is screened across tasks involving reading and speaking to allow various types of speech to be assessed. The research base has documented trends in articulation related to gender. For example, Davies & Goldberg (2006) suggest that women tend to articulate more clearly than men while men tend to make harder articulatory contacts and drop final phonemes in words and connected speech. Collecting an informal speech sample and comparing it to these trends is important to create goals for the desired gender communication style.
Auditory perceptual assessment of voice quality and speech production, can be used to establish baseline function (Roy et al. 2012). Interviews and rating scales can be used to better understand the client’s feelings and “possible discrepancies between gender identity and gender expression because of their pitch or vocal characteristics” (p. 215). Standardized questionnaires, such as the La Trobe Communication Questionnaire (Douglas et al., 2010) or the Voice Handicap Index (Jacobson, et al., 1997), are used in combination with an interview to explore the individual's perceptions of their voice and their perceptions of how others perceive their voice. The Transsexual Voice Questionnaire for Male to Female Transsexuals (MtF)- TVQ was “developed to measure the perceptions of MtF transsexuals” (Dacakis et al. 2013, p. 312) in relation to the clinician’s acoustic measures of voice pitch and quality. Researchers found a strong correlation between the questionnaire and self-ratings of femininity. Similarly, the Transgender Self-evaluation Questionnaire (TSEQ) was developed to document an individual’s perceptions of how their voice, usually in the absence of a voice disorder, influences their life and identity. Hancock (2010) had male to female transgender clients and undergraduate students use the TSEQ to rate the femininity of audio recordings. This study “complements previous research reports that subjective measures from clients and listeners may be valuable for evaluating the effectiveness of treatment in terms of how treatment influences…transgender people” (p.553).

More specifically, because concern about perceptions relates to passability, introspection on behalf of the client is important for understanding their social relationships, concerns with employment, and reactions of strangers. These feelings
maybe shared in a diary, with a counselor, or during an interview with the SLP. Regardless of how they are shared, documentation of these feelings is important for selecting treatment goals, contexts, and communication partners.

**Outcomes of an Evaluation Related to Treatment**

Typically an assessment may result in “a diagnosis of a voice disorder; clinical description of the characteristics and severity of the disorder; a statement of prognosis and client-centered recommendations for intervention; identification of appropriate treatment or management options; and referral to other professionals, as needed” (“Voice Disorders: Assessment”, n.d.). For individuals who are transgender, this is a determination of current function in order to identify potential objectives for change. Rarely is a voice or speech disorder diagnosed.

Following any assessment, an SLP can develop a treatment plan to address areas of concern or difficulty. An SLPS intervention is designed to hone the strengths and weaknesses related to underlying structures that inhibit voice or speech production, facilitate participation by providing the individual with strategies and skills to efficiently communicate, and modify or reduce communication barriers in one’s environment. Intervention approaches are individualized and are often composed of both direct and indirect approaches.
**Intervention**

Direct approaches manipulate the laryngeal structures to modify vocal behaviors and establish healthy vocal production (Verdolini, 2000). To elaborate, these techniques often target a change in the way the vocal folds vibrate to improve voicing. Examples of direct therapeutic techniques include resonant voice therapy and vocal function exercises. Indirect approaches modify the psychological, behavioral, and physical environments where voicing is used (Thomas & Stemple 2007). Examples of indirect techniques include counseling to modify psychological factors, patient education about vocal misuse, and implementation of environmental modifications like using amplification. When indirect approaches are considered, the SLP may collaborate with other professionals, like occupational therapists, physical therapists, and/or make referrals to other professionals, such as psychologists, when necessary to provide the best care.

According to Pickering (2015) “Transgender voice and communication is a growing area of clinical service delivery in the United States and around the world; however, many clinicians are unsure where to begin” (p. 26). Since hormones, such as estrogen and androgen-reducing medications, don’t alter the voice, patients desire a behavioral intervention to feminize their vocal quality and communication. Goals to feminize speech are frequently provided in a holistic approach with a mix of direct and indirect techniques, including promotion of vocal health, elevation of fundamental frequency, alteration of prosody patterns, increased breathiness, use of precise articulation, and pragmatic modifications. Most research to date, however, has either
examined a specific component at a time or was unable to separate the effects of various treatments provided to a client. Each aspect will be reviewed next.

**Vocal Hygiene:** Vocal hygiene refers to behaviors for maintaining or achieving a healthy voice. By reducing vocal misuse and increasing the use of positive voice behaviors, it is possible to prevent vocal fold lesions that affect the integrity of the voice quality. Common recommendations to improve vocal hygiene are to: use an amplification system when speaking to large groups; avoid yelling; practice safe throat clearing; and increase water intake to ensure the tissue of the vocal folds remains hydrated. These types of vocal health strategies are important for anyone working on voice and speech targets in order to do so safely. Many individuals transitioning MTF or FTM are not aware of how these behaviors can negatively impact their vocal quality. Therefore, it is important to address safe voice use prior to any changes in the way the voice is used.

**Fundamental Frequency/Pitch:** Fundamental frequency is a measure of vocal fold vibration and is a product of vocal fold size, tension, and subglottic pressure. Its physiological correlate is pitch. Hancock & Garabedian (2013) found that the average speaking fundamental frequency of adult males is approximately between 107-120 Hz, while the average female fundamental frequency is between 189-224 Hz. In order for transgender females to be perceived as female, the fundamental frequency needs to fall in a gender-neutral range of at least 155-165 Hz. SLPs often target an increase in fundamental frequency when working with MTF clients to reach this gender-neutral range. “Achieving gender congruent voice is critical to psychosocial and financial
wellbeing and quality of life” and is important to passing (Oates and Decakis, 2015, p.1). When an individual’s fundamental frequency is within the gender-neutral range, there is greater possibility that their inner and outer gender expression match for unfamiliar listeners, in turn reducing social anxiety surrounding communication and increasing confidence.

**Prosody:** Prosody is a measure of patterns of intonation and stress in speech. Hancock & Garabedian (2013) found that more intonation fluctuation, indicated by a greater range of semitones as a measure of pitch variability, resulted in greater probability of being perceived as female. In their retrospective chart review of 25 cases, they compared conversation samples, using Visi-Pitch, of nine voices perceived as female with ten voices perceived as male. They determined that the female perceived voices had a significantly greater percentage of upward and downward inflections. Neither inflection type, on its own, was a significant predictor of femininity ratings. They determined that the use of a pitch monitoring system was important as a tool for auditory and visual feedback to the client about intonation patterns. The research remains inconclusive as to whether or not intonation has a major influence on gender perceptions as a standalone measure but it may be important as a component of voice/speech change.

Often individuals who are transgender make attempts, often unsuccessfully, to change their voice and speech on their own using videos and materials available on the internet. Gelfer (1999) found that beginning MTF clients who had not been successful in their personal attempts to change their pitch benefited visual support to establish a target
vocal pitch in the first treatment session. Using Visi-Pitch (Kay Pentax), a computerized software for analyzing voice quality, the client was asked to produce various frequencies using /ma/. The Visi-Pitch software provided visual and auditory feedback about the client’s production of /ma/ in addition to clinician cues to use a light and clear vocal quality. As the target /ma/ was sustained across many trials, the Visi-Pitch fundamental frequency visual bar on the computer screen for feedback was raised, and a new target was selected. To promote generalization of the desired pitch across word and sentence level tasks, researchers found that holding /m/ before speaking facilitated oral resonance and provided the client an opportunity to locate the desired pitch before task completion. They also found that Visi-Pitch IV software provided additional information about intonation and inflection that could be recorded, documented, and compared to gender norms in real time and across treatment sessions.

**Endurance & Breath Support:** To address vocal strength and endurance, an SLP will often teach vocal function exercises (Stemple, 1984). These include a series of warm-ups, pitch glides, and sustained vowels, with a focus on abdominal breathing and relaxed phonation to strengthen the vocal mechanism. Gelfer & Dong (2012) explored using vocal function exercises with three MTF clients who were receiving services for voice feminization. At the start of therapy, speech samples collected indicated that the participants were perceived as male. Post-test results, after six weeks of therapy, identified their new samples as significantly less masculine and more feminine. The role of the vocal function exercises in this change in perception was unclear, but participants found these exercises to be helpful in their overall treatment regimen. Researchers in this
study suggested that the number of sessions and experience living full-time as a woman might have contributed as important variables to predicting therapeutic outcomes.

**Increasing Breathiness:** During phonation, the vocal folds approximate and vibrate to produce sound waves. When excess air escapes the glottis (i.e., the space between vocal folds) or there is incomplete closure of the vocal folds during vibration, perceptually the voice is perceived as breathy. Van Borsel et al. (2009) found that females have greater levels of air escaping the glottis due to a posterior glottal chink. This anatomical difference between men and women results in a naturally breathier vocal quality for female speakers. In their retrospective chart review, Hancock and Garabedian (2013) found that breathiness was selected as a target by clinicians for 48% of clients, to increase the likelihood that a MTF client would be perceived as female by unfamiliar listeners. They found that breathiness increased over 12 treatment sessions. To increase breathiness, activities focused on diaphragmatic breathing in vowels, words, then conversational speech. Researchers concluded that the increase in breathiness appears to have been effective in combination with other therapy targets including forward resonance and increasing fundamental frequency. However, more research should be conducted regarding the communication partners’ perception of the speaker's gender by breathiness as a standalone measure.

**Articulation:** Articulation is the use of the articulators (tongue, palate, lips, jaw, etc.) to create accurate speech sounds. According to Davies & Goldberg (2006), to be perceived as more feminine, articulation should be clear, and pronunciation should be
precise. The tongue is generally in a more forward position. In contrast, to be perceived as more masculine, some phonemes may be dropped, and words tend to perceptually sound short, choppy, and/or less precise. Free and Dacakis (2007) asked 20 MTF clients to read aloud the Rainbow Passage twice, first with precise articulation and second with imprecise articulation. Researchers found that 40% of participants were considered more representative of a female speaker when using precise articulation.

**Forward focus:** A forward focus to the voice, also known as resonant voice, can be perceived as a lighter, more feminine type of voice quality. According to Verdolini-Ambott et al. (2000), resonant voice is described by feeling vibratory sensations within the facial muscles as a result of sound waves from vocal fold oscillations. The individual achieves a forward resonance by humming and manipulating the position of various articulators to achieve a buzzy sensation in the front of the face. Individuals then progress through words, sentences, and conversation using this forward focus. This forward resonance, or forward focus, creates a lighter voice that may be perceived as more feminine. The objective of resonant voice therapy is to optimize the vocal output intensity by reducing the amount of impact on the vocal folds. Dacakis et al. (2012) found that resonant voice therapy allowed the vocal folds to remain slightly abducted during phonation to increase perceptual breathiness and decrease loudness for MTF transgender clients. As the clients achieved resonant voice at different stages in the hierarchy (humming, with CV vowel combinations, at the word level, chanting, and then in connected speech) new goals were created to optimize vocal femininity. Use of
resonant voice by a MTF transgender client may ease the transition to a higher pitch and promote safe and healthy voicing, in addition to developing a lighter, better voice quality.

**Resonance:** Resonance refers to the way that airflow travels through the oral and nasal cavities, creating different types of sounds based on the size and shape of those cavities. Formants are the frequency components of different sounds, particularly vowels, that are created as sound waves move within a cavity. Davies & Goldberg (2006) report that generally, women use higher formants compared to men (and men use lower formants compared to women). The female resonant tract is shorter, paired with smaller vocal folds, creating higher resonant frequencies. The male vocal tract is longer, paired with longer vocal folds, creating lower resonant frequencies. Formants are affected not only by shape and size of the vocal tract, but also tongue height and positioning. Dacakis et al. (2012) found that modification of vocal resonance, by altering tongue position during speech, paired with precise articulation, resulted in perceptions of feminine speech for MTF clients.

**Pragmatics:** As the voice becomes feminized, a subset of pragmatic goals may be implemented to help an individual who is transgender be perceived as feminine. Pragmatic skills involve the social exchange of language and how language is used, often encompassing things like gesture use and body language, as well as facial expressions. According to Dacakis et al. (2012), voice changes don’t always correlate with the individual’s satisfaction ratings related to their communication; one reason for that may be that the non-verbal, pragmatic aspects must match as well. Hancock & Garabedian
(2013) found that addressing non-verbal communication such as maintaining eye contact, using hand gestures, varying facial expressions and posture, and nodding could increase the likelihood that a MTF transgender client will be perceived as feminine. A thorough evaluation of nonverbal aspects of communication is not within the typical scope of practice for SLPs.

Pragmatics can also include aspects of social discourse. Hancock and Garabedian (2013) recommended treatment goals that target pragmatic discourse and include the client increasing conversation elaboration or the use of expressive phrases and self-disclosure. In contrast, Davies et al. (2015) reported that there are strong social stereotypes about gender norms and discourse trends related to culture, class, and age that can be used to guide behavior change. Gender norms may not be appropriate for every client if they don’t correspond with their culture, class, or age. In instances where pragmatics are a priority for the client, researchers recommended that the SLP offer feedback in these areas and encourage the client to weigh the research findings and SLP suggestions against personal experiences. Davies et al. (2013) found that having the client explore and compare their gender markers in the specific environment or context of their concern resulted in examination of their own beliefs and behaviors. Said differently, the client’s environment and communication partners shape their desired behaviors. For these reasons, clients should focus on specific contexts important to them or choose a communication partner’s mannerisms that they’d like to replicate. Once they have a target, they can compare and contrast observable differences and work to change their target behavior(s).
**Counseling:** The American-Speech-Hearing Association scope of practice lists counseling as a service delivery domain, adding that it is within the SLPs’ scope of practice to counsel surrounding “interactions related to emotional reactions, thoughts, feelings, and behaviors” (p.9). Specifically, when serving clients who are transgender, according to Adler (2017), the SLP has an opportunity to understand “how authentic the client presents him or herself as well as whether or not there is any dissonance that surfaces in that client if he or she feels that the new gender identity is being compromised because of the way they sound” (p.92). Adler suggests having a discussion that reveals the client’s desired goals. He suggests an ongoing subjective analysis which can serve to motivate the client and measure progress. According to Dacakis, Oates, & Douglas (2017), self-ratings serve as a means to gather perspective about goal areas and understand the client’s priorities. According to Azul, Arnold, & Neuschaefer-Rube (2018), the individual may have self-perceptions that are hypercritical.

**Development of clinical knowledge and skills**

While the literature base for assessment and supported intervention techniques continues to grow and drive clinical decision making, that does not mean practitioners in the field have access to the latest information. It’s important to understand what speech-language pathologists know about providing services to individuals who are transgender. This includes examining where they receive their education, training, and resources. These factors may influence their service delivery and confidence in service delivery.
To investigate the relationship between SLP graduate student clinicians’ clinical self-efficacy beliefs and their clinical performance, Pasupathy et al. (2013), had SLP graduate students complete the SLP Clinical Self-Efficacy Inventory (SLP-CSEI). Researchers predicted that self-efficacy would be important because it’s a strong predictor of performance and retention in our field. Researchers found a positive relationship between graduate student's clinical self-efficacy beliefs and their clinical performance, as well as between their self-efficacy and experiences. For example, students in the second year showed greater confidence (self-efficacy) than those in the first year; the opportunity for supported practice (i.e., mastery experiences) improved their self-efficacy. They also found that SLP student self-efficacy varied across clinical tasks, with lower self-efficacy in more complex tasks like evaluations. Graduate students who had higher ratings on the SLP-CSEI were observed to have more confidence. As expected, successful experiences seemed to foster confidence. Interestingly, interpretations by Pasupathy et al. (2013) suggested that to increase clinical confidence in students, it’s important to monitor their anxiety and stress levels so that they feel prepared on their externships. Researchers recommended that program directors, supervisors, and professors measure student confidence and anxiety levels routinely in addition to formal evaluations of their academic knowledge and clinical skills. Supervisors can communicate their observations with their clinicians to encourage self-reflection. Using effective feedback, supervisors should follow a “coping strategy model to ease performance anxiety to increase self-efficacy” (p.158). This would include modeling perseverance through obstacles and evaluative feedback. Feedback should use positive verbal persuasion to encourage student clinicians to attempt, persist, and
succeed, which in turn promotes skill development and builds confidence in successful task completion (Bandura, 1997). To date, no other studies in the field of communication sciences and disorders (CSD) has examined clinical self-efficacy, and in particular, not in relation to working with individuals who are transgender.

The need for supportive learning environments and feedback is not unique to CSD. Gibbons (2010) explored the self-efficacy of nursing student clinicians. Researchers administered a questionnaire to 171 final-year nursing students to measure support, control, self-efficacy, and coping styles to identify sources of stress and burnout in the nursing field. They found that nursing educators and supervisors needed to consider how course experiences or lack thereof, can lead to distress, and that peer support was critical to encourage coping skills. Their most significant finding pertained to “validating student learning, positively providing positive feedback, and positively supporting” to increase students' self-efficacy” (p. 1307). Alavi (2014) had four suggestions for nursing students developing self-efficacy skills which includes all four methods of developing self-efficacy.

1. “Opportunity to practice clinical skills in skill labs under the supervision of a clinical educator.

2. Students should receive continuous and effective feedback throughout their study in clinical courses.

3. Clinical educators should provide wide range of clinical experiences for nursing students.
4. Students should be encouraged to act independently and under indirect supervision of clinical educators, when they reached to a certain level of competency.” (p. 25881).

While these suggestions were reported on nursing students, similar steps may be useful with SLP graduate students. The process of gradual development of clinical skills, first in a highly mentored context to a later, more independent context, is important for both self-efficacy and clinical skill performance.

**Overview of How Self-Efficacy Develops**

Students who have not been exposed to individuals who are transgender not only lack the content knowledge and experience but may also lack confidence in providing assessment and treatment. To assess current perceptions of SLP’s student clinicians working with transgender voice clients, Hancock & Haskin (2015) composed and sent a survey to clinicians in four countries. They survey included questions “regarding respondent characteristics; self-ratings of knowledge, comfort, and feelings about LGBTQ people; and LGBTQ terminology and culture” (p. 209). They found their participants generally had positive attitudes in working with transgender and other LGBTQ subgroups. However, 47% of the surveyed SLPs did not have coursework addressing transgender communication in their Master’s curriculum. Additionally, 51% couldn’t describe what therapy would include or look like (p. 206). This study demonstrates the need to promote LGBTQ cultural competence within the field of SLP. However, it is not enough to possess knowledge of the culture to be considered
competent; graduate students likely need exposure to the culture as well. Further, graduate programs have a responsibility to help student clinicians develop self-efficacy for serving individuals across multiple populations, including those who are transgender.

According to Bandura (1997), self-efficacy affects people’s choice of activities and behaviors, how much effort they expend, and how long they will persist in the face of obstacles and aversive experiences. He believed that there are four sources of self-efficacy development: mastery of experience, social models, mood, and stress. We build a strong sense of self-efficacy through the mastery of experiences. Succeeding in a difficult task teaches us that sustained effort is worthwhile and meaningful. Failure can undermine self-efficacy, but also teaches us to persevere through challenges. For graduate SLP students, feeling confident in clinical service provision will require multiple clinical experiences, with feedback from superiors, peers, and teachers. To develop self-efficacy over time, supervisors typically decrease scaffolding as student clinicians increase skill. In other words, early experiences may be highly supported by the supervisor while later experiences are completed more independently. This process facilitates mastery as the difficulty level increases. However, if the student clinician becomes discouraged by the task demands or difficulty, it is likely that their stress and mood will decrease their overall confidence, potentially jeopardizing the quality of the services provided.

Self-efficacy can also be shaped through interactions with social models (i.e., vicarious learning). Observing others succeed teaches us that we possess the capabilities
to master comparable activities (Bandura, 1997). The more similarities we perceive ourselves to have with the model, the more we believe we can achieve success in a comparable activity. In a clinical setting, the model is often a clinical supervisor who may demonstrate various techniques prior to the student clinician implementing them. Through ongoing observation of the supervisor and/or peer models, paired with self-reflection and feedback throughout the experience, self-efficacy increases.

In addition, somatic and emotional states influence an individual’s perceived success completing a task. Beck et al. (2017) explored the effects of mindfulness on undergraduate and graduate speech-language pathology students. They found that mindfulness practice of twenty minutes a day decreased perceived and biological stress levels and maladaptive aspects of perfectionism across one semester. Because anxiety and tension increase feelings of vulnerability, they may lead to clinicians leaving the field or feeling ill-equipped when new situations and demands arise. Exposure to and experiences with clients who are transgender may reduce anxiety and stress when those interactions arise. Reducing or managing stress is important because it generates confidence and redirects cognitive demands to undergo anticipatory forethought to promote positive coping skills. In other words, exposure to transgender individuals and supported practice in clinical interactions should reduce stress and promote the development of self-efficacy with this population.
Origins of the Profession and Graduate Programs

In the late 1960’s, technological advances and standardized testing protocols led to differential diagnosis between speech and language disorders. ("What is a Speech-Language-Pathologist?, n.d.) Between the 1960’s and 80’s, advances in research led to treatment approaches that were broadened to serve individuals with voice and pragmatic communication disorders.

To address the growing demands of those served by speech-language pathologists, universities across the country created undergraduate and graduate programs to educate upcoming speech-language pathologists and audiologists. The Council on Academic Accreditation for the American Speech-Language-Hearing Association (ASHA) sets the standards for SLP training programs and requires educators to have their students think critically to apply foundational knowledge and skills to the identification, assessment, and treatment of various communication disorders. The Knowledge and Skills Acquisition form (KASA) lists the knowledge and skills that students must acquire and tracks the experiences in which skills or knowledge are achieved related to the primary domains of identification, assessment, and treatment across a number of disorder categories. Many of these standards can be addressed in academic coursework to develop knowledge but need additional experiences to facilitate skill development.

All students in an accredited master's program must obtain a minimum of 400 clock hours of supervised clinical practicum. Graduate students are placed in a variety of settings, such as schools, hospitals, or skilled nursing facilities, and will serve individuals
across the lifespan. Students earn hours when they are leading sessions or co-treating with a clinical supervisor. The experiences of the graduate student could consist of screening, identifying, assessing and interpreting, diagnosing, rehabilitating, and preventing disorders of speech and language (ASHA, 2013). These clinical experiences build upon academic coursework to create well-rounded speech-language clinicians who have both the academic knowledge and clinical skillset required for professional practice.

One of the standards requires a basic knowledge of voice disorders, which most programs incorporate into academic coursework. The clinical standards do not specify a minimum number of hours in voice-related interactions. Serving individuals who are Transgender tends to fall into voice-related coursework. While knowledge and skills related to transgender services are recommended, there is not a requirement to include transgender communication content in any coursework or have clinical experiences with this specific population.

Without academic and clinical requirements to gain experience with this population, it is not surprising that Davies et al. (2015) found that many transgender individuals have negative experiences with ill-informed or unempathetic professionals (not necessarily SLPs). As reported earlier, Sawyer & Perry (2014) found SLPs to generally lack confidence in serving transgender individuals, which could impact the quality of care provided. To provide the highest quality of care, the ASHA Code of Ethics (2016) requires that clinicians understand and respond appropriately to a variety of cultural variables with which a client may present. Some of these variables include age,
beliefs, ethnicity, linguistic background, and gender to name a few (ASHA, n.d.). Often, understanding cultural variables is described as cultural competence.

Wells (2000) has defined six stages on a continua that outline the development of cultural competence for health care professionals. These stages are 1. cultural incompetence: lack of knowledge, 2. cultural knowledge: learning the components and influences of culture, 3. cultural awareness: identifying and understanding how culture shapes behaviors, 4. cultural sensitivity: understanding cultural differences, 5. cultural competence: the practice of culturally appropriate and sensitive assessment and treatment, 6. culture proficiency: cognitive and consistent practice of upholding the client’s values, opinions, and beliefs before one’s own. Howells et al. (2016) suggested that in our culturally and linguistically complex world that the role of university programs is to try to prepare future SLPs to meet their client's needs, varied as they may be. But helping students develop cultural competence is a challenging process, and programs have struggled to effectively support the development of cultural competence. Howells et al. (2016) found that reflective practices to help students examine their own beliefs during clinical placements with diverse populations were effective in developing culturally competent clinicians. Farrugia-Bernard (2018) suggested a similar practice to address clinical work in urban schools with culturally and linguistically diverse clients. While many may think of people of color or those who are English-language learners when discussing cultural competence, individuals who are transgender also fit into this category. Students and clinicians require additional training and experiences with this population to develop an understanding of the culture.
Graduate Student Experiences and Training with Individuals Who Are Transgender

It is worthwhile to consider current curricular examples, such as University of Pacific City Oregon, the College of Saint Rose, and La Trobe University’s course and clinical immersion programs to provide experiences with individuals who are transgender. The University of Pacific City Oregon has a standard three-credit graduate-level Voice Science and Disorders course. In addition to coursework, the university has a Transgender Voice Program offered through the Pacific Psychology & Comprehensive Health Clinicians in Portland and Hillsboro. In the program, graduate students provided SLP services for individuals in the transgender community who want to feminize their voice, giving them the opportunity for reflective practice with a diverse population.

Outside of the clinic and classroom, the program offered an optional workshop for SLPs, educators, and others in healthcare and education. The mission of the workshop was to learn to better serve individuals across the gender spectrum. This was done by teaching attendees specific skills in authentic voice and communication and building ways to support the LGBTQ+ youth in educational settings. More details about graduate student SLP clinical experiences and coursework could not be obtained from their website.

The College of Saint Rose in New York has a history of serving people who are transgender for almost 10 years in their Communication Sciences and Disorders department, as well as providing clinical experiences for students. Researchers at the College of Saint Rose immersed seven graduate students in a semester-long clinical
practicum with individuals who were transgender. Their Transgender Voice and Communication Modification program met two hours each week, in which the students were mentored by a clinical supervisor. According to Kayajian (2017), before immersion in the program, the students spent time in the classroom exploring the transgender community, psychosocial issues, transgender voice and communication, and research (p. 120). Students completed a transgender case study, interacted with transgender guest speakers, and in small groups interviewed a transgender client. Once in the immersion program, graduate students served as supportive communication partners and coaches and taught clients about vocal health, Resonant Voice Therapy, and Vocal Functional Exercises. Components of communication targeted pitch, inflection, resonance, articulation, loudness, nonverbal communication, language, and nonverbal vocalization such as coughing or laughing (Kayajian, 2017, p. 117-118). Pre- and post-immersion, students completed a survey that was coded for recurring themes that described what they had learned and how the experience affected them as clinicians. Graduate students reported increased knowledge, awareness, and acceptance of culture throughout the immersion process. Given the need to meet KASA and ASHA standards, collaborative coursework and clinical experiences not only provided students with the skills and knowledge to serve transgender voice clients, but also opportunities to increase their overall clinical confidence and increase cultural competence.

At La Trobe University in Australia, students completing a 2-year graduate degree are expected to reach competence in the area of voice to meet the Australian practice standards, which can include practice with transgender clients. Students are expected to
be able to “describe the etiologies and epidemiology of voice disorders; conduct a comprehensive voice assessment using perceptual, acoustic, and physiologic measures; to specify the rationale, evidence base, and theoretical bases of voice interventions; and provide care education, direct voice therapy, and informational and affective counseling for clients with voice disorders” (Oates & Dacakis, 2017, p.109). Graduate students’ transgender-specific knowledge, cultural competence, and clinical skills are developed throughout a week-long problem-based learning case. The case is accompanied by lectures and practical classes. There is also an opportunity for the students to undertake a transgender-specific clinical placement following their coursework, under the mentorship of an experienced SLP. Within this program, individuals who are transgender may receive voice feminization services. Each MTF voice client is offered twelve sessions broken into two phases. In the first phase, the graduate student clinician completes a comprehensive voice assessment and interview and introduces Vocal Function Exercises. In the second phase, sessions focus on modification of voice characteristics including pitch, resonance, intonation, and articulation. Clients then complete a Competency Based Assessment in Speech Pathology (COMPASS) tool to give feedback to their graduate student clinicians and their overall program impressions. While further research is required to determine the outcomes of the training program in regard to student confidence and cultural competence, both clients and students attest to the positive experience in the voice clinic. Carew et al. (2007) added that despite challenges including transgender-specific components into the SLP’s curriculum, La Trobe University justifies the training program as a means to respond to the increasing number
of gender-variant individuals seeking our services and the literature base to support effective and efficient services for this population.

While programs like the University of Pacific Oregon, the College of Saint Rose, and La Trobe University have standalone voice courses that address transgender needs and clinical experiences specific to transgender populations to bridge the gap between the classroom and clinical skills, it does not appear to be standard practice for all universities. It is possible that more universities have a standalone course and therapeutic experience related to transgender voice therapy, but the information is not publicly available.

**Development of Graduate Student Clinician Self-Efficacy with Transgender Services**

Adler (2017) believes that to best serve a client who is transgender, an SLPs needs multiple experiences and more than a basic understanding of voice therapy. Without the proper knowledge and skills, an SLP inexperienced with voice clients may be doing the client a disservice and/or providing unethical services. Adler (2017) identified common clinical skills that will aid SLPs working and interacting with transgender clients. A few of the common skills the SLP must possess include empathy, self-disclosure, and respect. He also described potency, the ability to show confidence and have an impact on the client and family and the counseling provided (p. 94), as an important skill. Adler (2017) suggested the SLP develop common clinical skills and intrapersonal skills to become a micro-counselor, which is achieved through analyzing his or her own interpersonal skills through self-reflection and video recordings when
working with this population to increase self-efficacy. Adler (2017) acknowledged that developing these skills is a process that takes place after having multiple experiences and opportunities to reflect. His research is beginning evidence to support the development of soft skills and self-reflection as predictors of confidence in clinical interactions. At the College of Saint Rose, it has become a standard practice for students to engage in self-reflection before, during, and after their immersion program working with individuals who are transgender. Program attendees also provide feedback about their clinical skills and interactions to foster clinical growth and confidence.

It is evident that across disciplines, students in clinical settings will develop coping skills and a strong sense of self-efficacy by a means of learning from encouraging and experienced mentors who model strong coping skills. Having a multitude of opportunities to practice and show competency in skills and knowledge outcomes with faded supports is also valuable. While very little research has been published regarding the process of SLP clinical self-efficacy development, it is known that increasing self-efficacy may in turn increase independence and confidence, resulting in informed decision making and higher quality of care. Given that self-efficacy is task-specific, we need to learn more about self-efficacy in students and practicing SLPs working with transgender clients as a first step to developing new opportunities for education and training.

Determining graduate student self-efficacy surrounding their skills and knowledge of transgender communication assessment and intervention may help identify areas where
students are less confident and therefore may require additional supervisory support, clinical experiences, or coursework. Because most graduate programs may not offer training, and many clinicians received training prior to the addition of the transgender population to the SLP scope of practice, little is known about how SLPs feel about providing transgender services and how they learn it. In a survey sent to 228 SLPs in Illinois, Sawyer & Perry (2014) found many SLPs are delivering services to those who are transgender. However, over 50% of SLPs felt unprepared and uncomfortable providing assessment and treatment services. Sawyer & Perry (2014) believe the SLPs feelings of unpreparedness may be contributed to a lack of education. In fact, 62% of those who responded to the survey were not provided with educational training related to service delivery for individuals who are transgender. To learn more about the barriers impacting service delivery, the goal of this study is to examine perceived graduate student and SLP knowledge, skills, and self-efficacy in conducting an assessment and treatment for transgender clients. An in depth understanding how clinical experiences, education, and training influence the confidence levels of SLPs working with individuals who are transgender could lead to changes to content in graduate coursework structure and clinical opportunities. Further, it is possible that other factors such as personal attitudes, biases, lack of exposure to individuals who are transgender, or generally poor soft skills could impact service delivery to transgender clients. All of these variables will be considered in this exploratory study.
Research Questions

1. What are speech-language pathologists’ and graduate clinicians’ perceived self-efficacy in delivering transgender voice therapy?

2. What do speech-language pathologists and graduate clinicians know about providing services to individuals who are transgender?

3. What services do speech-language pathologists and graduate clinicians provide to individuals who are transgender?

4. How do speech-language pathologists and graduate clinicians receive their training related to transgender populations?

5. What could graduate programs do differently to educate speech-language pathologists?

6. How do speech-language pathologists and graduate clinicians feel about working with individuals who are transgender?
CHAPTER 2

METHODS

Design

A survey, employing both qualitative and quantitative measures to assess the self-efficacy, knowledge, perceived skills, and education of speech-language pathologists and graduate clinicians who have experiences working with the transgender population was used. The independent variables (IV) included the groups being compared, graduate SLP student clinicians vs. practicing SLPs, as well as various demographic characteristics like education level and work setting. The dependent variables (DV) include the graduate students’ and SLPs’ self-efficacy, knowledge, experiences, and biases towards individuals who are transgender.

Participants

A total of 328 participants were recruited from ASHA Special Interest Group (SIG) number fourteen, a national email list of CSD graduate program coordinators, five Facebook groups (i.e., Adult Rehab Speech Therapy, Clinical Research for SLPs, Clinical Voice Therapy, Gender Spectrum Voice and Communication, and Speech-Language Pathologist), and a national voice list serv via email (University of Iowa Voice ListServ). Of the completed 142 responses, 27/142 were practicing SLPs with at least a Master’s degree and 115/142 were graduate students. In order to have a suitable statistical power, only fully completed surveys were included in the statistical analyses. Participant demographic information was collected as the first item in the survey. All participants were described by 1) highest level of education 2) where they obtained their Bachelor’s
Degree, Master’s Degree and/or PhD (if relevant) 3) whether they hold their ASHA Certification of Clinical Competence, and 4) past and present work settings. See Table 1 for details about participants who were included in the analyses. It should be noted that participants were able to select more than one work setting.

Table 1. Demographic Data for Participants Who were Graduate Students and Practicing Speech-language Pathologists.
<table>
<thead>
<tr>
<th>Demographic Information</th>
<th>% SLPs</th>
<th>N</th>
<th>% Grads</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earned a Bachelor’s Degree</td>
<td>100</td>
<td>27</td>
<td>100</td>
<td>114</td>
</tr>
<tr>
<td>Earned a Master’s Degree</td>
<td>59</td>
<td>16</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SLPD/CScD/DSLP</td>
<td>15</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PhD</td>
<td>26</td>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Have CCC’s</td>
<td>89</td>
<td>24</td>
<td>7</td>
<td>1*</td>
</tr>
<tr>
<td>CFY</td>
<td>4</td>
<td>1</td>
<td>7</td>
<td>1*</td>
</tr>
<tr>
<td>Number of Years Practicing 0-5</td>
<td>26</td>
<td>7</td>
<td>99</td>
<td>113/114</td>
</tr>
<tr>
<td>Number of Years Practicing 6-10</td>
<td>22</td>
<td>6</td>
<td>0</td>
<td>0/114</td>
</tr>
<tr>
<td>Number of Years Practicing 10+</td>
<td>52</td>
<td>14</td>
<td>.8</td>
<td>1/114*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Past Work Setting</th>
<th>N 27</th>
<th>% of People</th>
<th>% of Codes</th>
<th>N</th>
<th>% of People</th>
<th>% of Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Care</td>
<td>10</td>
<td>37</td>
<td>10</td>
<td>9</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Adult Outpatient</td>
<td>21</td>
<td>78</td>
<td>22</td>
<td>13</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>B-3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Group Home</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Home Health</td>
<td>4</td>
<td>15</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>NICU</td>
<td>2</td>
<td>7</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pediatric Outpatient</td>
<td>10</td>
<td>37</td>
<td>10</td>
<td>13</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Preschool</td>
<td>6</td>
<td>16</td>
<td>6</td>
<td>28</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>School</td>
<td>9</td>
<td>33</td>
<td>9</td>
<td>39</td>
<td>33</td>
<td>29</td>
</tr>
<tr>
<td>SNF</td>
<td>9</td>
<td>33</td>
<td>9</td>
<td>15</td>
<td>13</td>
<td>6</td>
</tr>
<tr>
<td>Subacute Care</td>
<td>8</td>
<td>30</td>
<td>8</td>
<td>5</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>University</td>
<td>12</td>
<td>44</td>
<td>13</td>
<td>61</td>
<td>52</td>
<td>26</td>
</tr>
<tr>
<td>Not currently Practicing</td>
<td>3</td>
<td>11</td>
<td>3</td>
<td>29</td>
<td>45</td>
<td>4</td>
</tr>
<tr>
<td>Other (e.g., impatient rehab and private practice, and student)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>8.5</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current Work Setting</th>
<th>N 27</th>
<th>% of People</th>
<th>% of Codes</th>
<th>N 117</th>
<th>% of People</th>
<th>% of Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>4</td>
<td>15</td>
<td>10</td>
<td>6</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>---</td>
<td>----</td>
<td>----</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Adult Care</td>
<td>4</td>
<td>15</td>
<td>10</td>
<td>6</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Adult Outpatient</td>
<td>14</td>
<td>52</td>
<td>39</td>
<td>10</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>B-3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Group Home</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Home Health</td>
<td>2</td>
<td>7</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NICU</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pediatric Outpatient</td>
<td>3</td>
<td>11</td>
<td>6</td>
<td>9</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Preschool</td>
<td>2</td>
<td>7</td>
<td>4</td>
<td>9</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>School</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>15</td>
<td>22</td>
</tr>
<tr>
<td>SNF</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Subacute Care</td>
<td>2</td>
<td>7</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>University</td>
<td>14</td>
<td>52</td>
<td>31</td>
<td>52</td>
<td>44</td>
<td>30</td>
</tr>
<tr>
<td>Not Currently Practicing</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>16</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Other (e.g., private practice, Head Start, student, acute care, brain injury unit, and impatient)</td>
<td>5</td>
<td>19</td>
<td>6</td>
<td>23</td>
<td>20</td>
<td>4</td>
</tr>
</tbody>
</table>
*It is unclear whether this participant was practicing in a state only requiring a Bachelor’s Degree to practice.

Table 2. Clinical Experiences Reported by Graduate Students and Practicing Speech-language Pathologists.

<table>
<thead>
<tr>
<th></th>
<th>Clinical Experience with Voice Clients</th>
<th>Clinical Experience with TG Clients</th>
<th>Mean # of Clients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grad Students</td>
<td>Y: 22</td>
<td>Y: 40</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>N: 55</td>
<td>N: 77</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Only in Grad: 40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practicing SLPs</td>
<td>Y: 26</td>
<td>Y: 21</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>N: 0</td>
<td>N: 6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Only in Grad: 1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Survey Instrument**

All participants received an email containing a description of the study and survey link. By selecting the link, participants gave their informed consent to participate. The participants accessed the survey link through Qualtrics (Provo, Utah). Qualtrics software was used to develop and analyze survey data.
The survey was comprised of nine sections. In the first and second sections, there were multiple choice, sliding scales, and open-ended questions regarding where participants received their degree(s), their years of clinical experience, and current and previous work setting(s). The third portion of the survey includes a series of yes/no and short answer questions regarding coursework at the undergraduate and graduate level related to voice and transgender communication. This section also included an open-ended question about what graduate programs could do differently to educate student clinicians about transgender communication. The fourth section contained yes/no questions and a matrix table about clinical experiences and familiarity in working with clients who are transgender. The fifth portion of the survey contained 24 multiple choice questions that were a direct replication of Billard’s (2018) Attitudes Towards Transgender Men and Women Rating Scale (AATMW) and will be described later in more detail. They were included to obtain information about the clinician attitudes and perceptions related to serving clients who are transgender. The sixth section contained several matrix tables on a 7-point scale to capture clinician familiarity, confidence, and experience in providing assessment and treatment services for clients who are transgender. This section also included 12 questions that were adapted from the Axboe et al. (2016) Self-Efficacy Scale (SE-12) For Medical Professionals. The SE-12 was developed as a tool to assess the self-efficacy (confidence) of clinicians following a training seminar to ensure better interactions with patients. It was modified and used in this study to capture graduate student and SLP confidence in soft skills, such as communication and empathy, when working with clients who are transgender. This scale will be described in more detail later. The seventh section contained two short open-
ended questions to capture the participant’s knowledge related to assessment and treatment. The final two sections of the survey contained yes/no and multiple-choice questions about the participants experiences and skills related to assessment and treatment and access to resources associated with clients who are transgender.

The Attitudes Towards Transgender Men and Women rating scale (AATMW), developed by Billard (2018), was used to gather information about clinician attitudes and perceptions related to serving transgender clients. The AATMW includes two non-identical 12-item subscales, one related to MTF populations and the other FTM populations. These 24 items were embedded in the survey and supported by the research base to be reliable and valid for measuring attitudes towards individuals who are transgender. This scale was included to potentially explain responses related to either self-efficacy or service provision by SLPs.

To assess the graduate student or speech-language pathologists' self-efficacy in delivering assessment and treatment to transgender voice clients, the Self-Efficacy Scale (SE-12) by Axboe et al. (2016) For Medical Professionals was used. The SE-12 was developed as a tool to assess the self-efficacy of a training seminar provided for clinicians to ensure better interactions with patients. They intended to use the survey to capture the skills pre-and post-training seminar to promote patient-centered conversations across occupational groups, including physicians, nurses, health care assistants, midwives, physiotherapists, and occupational therapists. It also showed equivalence when completed on paper and electronically. For this study, the SE-12 was used to assess the
graduate student or speech-language pathologists’ self-efficacy of their clinical soft skills related to patient interaction. Further questions were added, in a separate section, to address their confidence in their clinical skills to complete a comprehensive voice assessment and treatment related to articulation, volume and intensity, pitch, intonation and stress patterns, breath support, resonance, speaking rate, language, and pragmatics (all items with previous research related to transgender services). All participants were asked to list and identify areas of assessment and treatment for a client who is transgender (e.g., What area(s) would you assess with a client who is transgender?).

**Qualitative Data Analysis**

Raw data gathered from Qualtrics open-ended responses were analyzed qualitatively via thematic analysis (Braun and Clark 2006) to identify themes in educational experiences, knowledge, skills, and perceptions of individuals who are transgender. This process entails: 1) familiarization with the data by reading participant responses and documenting first impressions on reoccurring ideas, and re-reading responses; 2) generating codes for reoccurring themes; 3) condensing coherent themes; 4) re-coding with condensed codes; 5) and an inter-coder reliability check with two undergraduate student volunteers.

**Quantitative Data Analysis**

Data from Qualtrics was saved in spreadsheets for analysis. The second to fifth research questions were answered through quantitative analysis.
For the first research question, t-tests were used to determine whether there are any statistically significant differences between graduate student or SLP confidence level means across the eleven target areas (articulation, volume and intensity, pitch, intonation and stress patterns, breath support, resonance, speaking rate, language, pragmatics, vocal health, and counseling) of clinical services and means of the soft skills. A regression analysis was included to identify factors contributing to clinical self-efficacy for serving individuals who are transgender. For the second research question, a t-test was used to compare familiarity with various aspects of assessment and treatment between the groups. For the third research question, descriptive statistics via frequency counts were used to determine how often services are provided across the same eleven target areas (articulation, volume and intensity, pitch, intonation and stress patterns, breath support, resonance, speaking rate, language, pragmatics, vocal health, and counseling). The sixth research question was analyzed using a t-test to compare means between SLPs and graduate students on the AATMW.
CHAPTER 3
RESULTS

The results are organized to address each research question in numerical order. The Statistical Package for Social Sciences (SPSS) software was used to complete independent samples t-tests and a regression analysis. To analyze research questions qualitatively, procedures by (Braun and Clark 2006) were used identify common themes related to service provision related to assessment, treatment, and education. Frequency counts were also used.

Q1 What are speech-language pathologists’ and graduate student clinicians’ perceived self-efficacy in delivering transgender voice therapy?

To answer this question, multiple measures of self-efficacy were used. The SE-12 was included as a way to understand self-efficacy for soft skills, which are critical in working with an individual who is transgender. A self-efficacy rating of various clinical skills required when working with an individual who is transgender was also used, to more specifically measure direct service provision.

An independent-samples t-test was conducted to compare soft skills scores from the SE-12 across populations (Table 3). Practicing SLPs had slightly higher scores on the SE-12, but the difference was not statically significant ($t=-1.67$, $P=.10$, 95% CI [-1.40, .15]). An independent-samples t-test was conducted to compare self-efficacy in service delivery of various assessment and therapy techniques across populations (Table 3).
Practicing SLPs reported significantly higher self-efficacy than graduate students ($t=-7.18, P=.001, 95\% CI [-2.21, -1.25])). Figure 1 illustrates the increased SE-12 scores amongst practicing SLPs compared to graduate students. Figure 2 illustrates the self-efficacy scores for transgender service provision of practicing SLPs compared to graduate students.

Table 3. Means and Standard Deviations for SE-12 and TGSE for SLPs and Graduate Students.

<table>
<thead>
<tr>
<th>Group</th>
<th>SE-12 Mean (SD)</th>
<th>TGSE Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLPs</td>
<td>8.55 (1.80)</td>
<td>5.98 (0.92)</td>
</tr>
<tr>
<td>Graduate Students</td>
<td>7.91 (1.76)</td>
<td>4.25 (1.68)</td>
</tr>
</tbody>
</table>

Figure 1. SE-12 Scores for SLPs and Graduate Students
The variable of interest in this study was the TGSE. A number of factors that may influence development of self-efficacy for serving individuals who are transgender were identified and included in the survey. To determine which variables were predictive of self-efficacy for serving individuals who are transgender, a regression analysis was used. The enter method was chosen to create the most robust model. Independent variables that were available to enter the model included number of transgender clients served, years of clinical experience, education level, level of learning about transgender services, AATMW score, and SE-12 score. All variables were selected for the model and it was
statistically significant ($R^2 = 0.526$, F=24.0, p<0.001). A deeper inspection of the variables which were contributing the most to this result revealed level of learning about transgender services ($t=-8.61$, p<0.001, beta −.572) and SE-12 scores ($t=4.06$, p<0.001, beta .255).

**Q2 What do speech-language pathologists and graduate student clinicians know about providing services to individuals who are transgender?**

SLPs and graduate students’ knowledge was assessed with two questions on the survey. The first question asked about their familiarity with various evidence-based areas within the realm of transgender services, as a recognition-type of question. A follow-up question asked the participants to consider a hypothetical client and list the things they would include in assessment and treatment. This question was included to gain a deeper understanding of what SLPs and graduate students believed to be appropriate assessment and treatment techniques, drawing upon a recall type of task.

On the familiarity question, participants were asked to rate their exposure to evidence-based areas of service on a three-point scale, ranging from unfamiliar to very familiar. Because there were ten areas for each participant to rate, a total score with a maximum of 30 was calculated for each participant. An independent-samples t-test was conducted to compare familiarity scores across populations. The familiarity scores were significantly higher in practicing SLPs ($M= 24.44$, SD=5.8) and graduate students ($M= 16.26$, S.D. = 6.1) ($t=84.67$, P=.001) and this comparison is illustrated in Figure 3.
Figure 3. Familiarity with Treatment Approaches

To break this down further, Table 4 includes percentages of SLPs and graduate students who were familiar or very familiar with each potential area of service; a total of 27 SLPs and 102 graduate students responded to this question. Across all categories, most SLPs were familiar or very familiar with these services; only half of graduate students (or fewer) were familiar or very familiar with these services that are considered typical for working with someone who is transgender.
Table 4. SLP and Graduate Student Familiarity with Evidence-based Areas of Service.

<table>
<thead>
<tr>
<th>Area of service</th>
<th>% SLPs familiar/very familiar (total N = 27)</th>
<th>% graduate students familiar/very familiar (total N = 102)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changing fundamental frequency</td>
<td>89 (n=24)</td>
<td>48 (n=49)</td>
</tr>
<tr>
<td>Altering breathiness</td>
<td>81 (n=22)</td>
<td>36 (n=37)</td>
</tr>
<tr>
<td>Changing articulation</td>
<td>74 (n=20)</td>
<td>32 (n=33)</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>89 (n=24)</td>
<td>31 (n=32)</td>
</tr>
<tr>
<td>Resonance</td>
<td>93 (n=25)</td>
<td>40 (n=41)</td>
</tr>
<tr>
<td>Prosody</td>
<td>93 (n=25)</td>
<td>45 (n=46)</td>
</tr>
<tr>
<td>Loudness</td>
<td>93 (n=25)</td>
<td>43 (n=44)</td>
</tr>
<tr>
<td>Vocal health</td>
<td>93 (n=25)</td>
<td>52 (n=53)</td>
</tr>
<tr>
<td>Counseling</td>
<td>89 (n=24)</td>
<td>54 (n=55)</td>
</tr>
<tr>
<td>Pragmatics</td>
<td>89 (n=24)</td>
<td>45 (n=46)</td>
</tr>
</tbody>
</table>

SLP and graduate student knowledge of assessment and treatment techniques were assessed on a more specific level by asking them to list/describe what they would do with a hypothetical client. Responses to this question were coded and tallied.

Frequency counts of assessment and treatment techniques used by SLPs and graduate students are provided in Tables 5 and 6. There was significant overlap in the techniques listed by both SLPs and graduate students. A total of 25 SLPs and 99 graduate students responded to this question. Qualitative coding of these responses allowed multiple codes to be applied to a single response, if the participant listed different types of techniques/tools. For graduate students, a total of 196 distinct codes were identified for assessment, and 219 distinct codes were identified for treatment. For SLPs, a total of 56 distinct code were identified for assessment and 71 distinct codes were identified for treatment. Overall, graduate students listed more techniques within their responses, but were also relatively vague in the terminology used. SLPs tended to list very specific
questionnaires, voice measures, and other tools designed for individuals who are transgender.

In terms of assessment, questionnaires, acoustic analysis, and perceptual assessment were the top tools utilized by SLPs and graduate students. In terms of treatment, SLPs listed counseling, resonant voice therapy, vocal function exercises, visual biofeedback techniques, and semi-occluded vocal tract exercises as their top choices. Graduate students listed counseling, visual biofeedback techniques, resonant voice therapy, breath support training, and warm-up exercises as their top choices. Graduate students also mentioned tension reduction techniques, while SLPs did not include that as a treatment option.

Table 5. Assessment Techniques Reported by SLPs and Graduate Students.

<table>
<thead>
<tr>
<th>Assessment technique</th>
<th>SLPs (N=25, 56 codes)</th>
<th>Graduate students (N=99, 196 codes)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% SLPs</td>
<td>Number</td>
</tr>
<tr>
<td>Questionnaires, history, interviews</td>
<td>64</td>
<td>16</td>
</tr>
<tr>
<td>Quality of Life scales</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Acoustic analyses/software</td>
<td>68</td>
<td>17</td>
</tr>
<tr>
<td>Perceptual analysis</td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>Visualization of larynx</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>Identify goals of client</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Identify client preferred pronouns</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Counseling</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Unsure/further research needed</td>
<td>16</td>
<td>4</td>
</tr>
</tbody>
</table>
Table 6. Treatment Techniques Reported by SLPs and Graduate Students

<table>
<thead>
<tr>
<th>Treatment technique</th>
<th>SLPs (N=25, 71 codes)</th>
<th>Graduate students (N=99, 219 codes)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% SLPs</td>
<td>Number</td>
</tr>
<tr>
<td>Counseling</td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>Visual biofeedback (e.g., Visipitch)</td>
<td>28</td>
<td>7</td>
</tr>
<tr>
<td>Auditory biofeedback (e.g. playback)</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Resonant voice therapy</td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>Semi-occluded vocal tract</td>
<td>24</td>
<td>6</td>
</tr>
<tr>
<td>Vocal function exercises</td>
<td>32</td>
<td>8</td>
</tr>
<tr>
<td>Respiration/breath support training</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Vocal health training</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Warm-up exercises</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Pitch variation/adjustment</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>Resonance exercises</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Easy onsets</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Flow phonation</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Pragmatics/gestures</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Tension reduction (massage, stretching)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Articulation</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Language</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Unsure/need more research/learning</td>
<td>16</td>
<td>4</td>
</tr>
</tbody>
</table>

**Q3 What services do speech-language pathologists and graduate student clinicians provide to individuals who are transgender?**

To understand what SLPs and graduate students are offering to clients seeking services, two questions were included on the survey. The first asked participants to identify areas of both assessment and treatment that they had provided, broadly, from a list of choices. The second question went deeper, asking about use of specific techniques which have been reported in the literature.
For the broad areas of assessment and treatment being provided, responses of SLPs and graduate students are provided in Table 7. On this survey question, participants could check as many areas as they wanted; a total of 21 SLPs and 41 graduate students responded to this question.

**Table 7. Frequency of Assessment Techniques with Practicing SLPs and Graduate Students**

<table>
<thead>
<tr>
<th>Area</th>
<th>Assessment</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% SLPs (n)</td>
<td>% Grads (n)</td>
</tr>
<tr>
<td>Articulation</td>
<td>57 (12)</td>
<td>41 (17)</td>
</tr>
<tr>
<td>Volume &amp; Intonation</td>
<td>81 (17)</td>
<td>68 (28)</td>
</tr>
<tr>
<td>Breath Support</td>
<td>95 (20)</td>
<td>71 (29)</td>
</tr>
<tr>
<td>Resonance</td>
<td>95 (20)</td>
<td>73 (30)</td>
</tr>
<tr>
<td>Speaking Rate</td>
<td>67 (14)</td>
<td>46 (19)</td>
</tr>
<tr>
<td>Language</td>
<td>57 (12)</td>
<td>34 (14)</td>
</tr>
<tr>
<td>Pragmatics</td>
<td>67 (14)</td>
<td>44 (18)</td>
</tr>
<tr>
<td>Vocal Health</td>
<td>95 (20)</td>
<td>68 (28)</td>
</tr>
<tr>
<td>Counseling</td>
<td>71 (15)</td>
<td>61 (25)</td>
</tr>
</tbody>
</table>

*Figure 4* depicts a comparison of the frequency of assessment domains assessed by SLPs and graduate students, while *Figure 5* depicts the comparison of the frequency of treatment domains used by SLPs and graduate students. Visual inspection of these comparisons reveals two things. First, a higher percentage of SLPs provide all types of services as compared to graduate students. Second, both SLPs and graduate students appear to be assessing and treating a wide variety of areas.
Figure 4. Assessment Services Provided by Graduate Students and SLPs Across Broad Areas
When asked about specific, evidence-based techniques, a larger percentage of SLPs were noted to use these techniques. Figure 5 illustrates SLP and graduate student reporting of techniques used for therapy services. These figures relate directly to the responses from the open-ended question where SLPs and graduate students were asked to name the techniques they’d use with a hypothetical client (see table 6).
Q4 How do speech-language pathologists and graduate student clinicians receive their training related to transgender populations?

SLPs and graduate students were asked to identify courses in voice disorders, courses including information about individuals who are transgender, and courses where specific techniques for working with individuals who are transgender were discussed across both the undergraduate and graduate levels. Table 8 provides an overview of coursework and training during academic programming. Most SLPs and graduate students reported having a voice disorders course, particularly at the graduate level. Very few SLPs or graduate students had exposure to individuals who were transgender in their
undergraduate coursework. At the graduate level, only about 30% of both groups had specific training in techniques for working with individuals who are transgender.

Table 8. Undergraduate and Graduate Training Opportunities Reported by SLPs and Graduate Students.

<table>
<thead>
<tr>
<th>Academic level</th>
<th>Voice course</th>
<th>Transgender content</th>
<th>Specific transgender techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SLPs (%)</td>
<td>Grads (%)</td>
<td>SLPs (%)</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>16 (59%)</td>
<td>33 (29%)</td>
<td>7 (26%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 (11%)</td>
</tr>
<tr>
<td>Graduate</td>
<td>25 (93%)</td>
<td>76 (66%)</td>
<td>15 (56%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9 (33%)</td>
</tr>
</tbody>
</table>

For those who identified taking an undergraduate course that discussed transgender communication, the majority received information in a voice or fluency course, with a smaller group identifying a speech science or speech disorders class, counseling course, or introductory CSD course. At the graduate level, transgender communication was usually discussed in voice or speech disorders class. A few participants also reported additional coursework in an independent study or clinical course.

All participants were asked to indicate from a field of ten, what sources provided them with information about individuals who are transgender. Each participant was allowed to select more than one source. Figure 7 indicates sources accessed. SLPs overwhelming identified scholarly articles, websites (like ASHA and WPATH), and
continuing education as sources of their learning. Graduate students reported university courses, scholarly articles, websites, and social media groups as the sources of their learning.

Figure 7. Sources of knowledge for SLPs and Graduate Students.

SLPs and graduate students were also asked about the likelihood they would seek new information from a variety of sources. Figure 8 indicates that graduate students and practicing SLPs would be extremely and somewhat likely to access websites (e.g., ASHA), scholarly articles, continuing education classes, their colleagues. Clinical fellowship year mentors, blogs, social media groups, and university courses were less likely to be accessed.
A final question posed to all participants was related to how SLP education could be improved or done differently to educate their students about working with individuals who are transgender. Figure 9 is representative of the recommendations provided from all survey responses. Suggestions were placed into five domains from most to least suggested: lecture/seminar, vague, hands on experience, speakers, and not sure. Table 9 provides specific exemplars of each type of recommendations provided by SLPs and graduate students in the present study.
Figure 9. What Graduate Programs Could Do Differently
Table 9. Recommendations and Exemplars of Potential Graduate Program Improvements.

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Example Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture/Seminar</td>
<td>“Dedicate a portion of the general voice course to the assessment and treatment of transgender voice”</td>
</tr>
<tr>
<td>Vague</td>
<td>“Offer more resources for learning treatment methods”</td>
</tr>
<tr>
<td>Hands on Experience</td>
<td>“Ensure opportunities for clinical practicum experiences with transgender populations (i.e. healthcare screenings for LGBTQ...)”</td>
</tr>
<tr>
<td>Speakers</td>
<td>“Hire members of the transgender community to discuss voice training and quality of life with students and faculty. For faculty who teach about voice and voice disorders, implement mandatory sensitivity training to learn how to appropriately discuss transgender topics and people. Hire transgender services or individuals to do this training. Discuss transgender issues across a variety of topics and course work, not just for voice disorders. Be inclusive of transgender people when discussing topics of voice and sex and gender.”</td>
</tr>
<tr>
<td>Not Sure</td>
<td>“I'm not fully complete with my master's program so I am unable to answer this.”</td>
</tr>
</tbody>
</table>

**Q6 How do speech-language pathologists and graduate student clinicians feel about working with individuals who are transgender?**

All participants completed the AATMW as part of the survey. The AATMW assesses bias toward individuals who are transgender; on this measure, higher scores indicate less bias. An independent-samples t-test was conducted to compare scores from the AATMW between the graduate students and SLPs. The AATMW revealed slightly higher scores in practicing SLPs (M= 152.77, S.D.= 17.36) as compared to graduate students (M= 140.75, S.D. = 29.11), illustrated in Figure 10. This difference was statically significant (t=2.74, P=.008).
Figure 10. AATMW Scores
CHAPTER 4
DISCUSSION

Overview:

The primary aim of this study was to examine perceived graduate student and SLP knowledge, skills, and self-efficacy in conducting communication assessment and treatment for transgender clients. Moreover, the study examined whether personal biases, lack of exposure to individuals who are transgender, and generally poor soft skills could impact service delivery to transgender clients.

Research Question #1 What are speech-language pathologists’ and graduate clinicians’ perceived self-efficacy in delivering transgender voice therapy?

It was hypothesized that practicing SLPs would have higher perceived self-efficacy scores than graduate students on general transgender service provision measures and the SE-12. Given all practicing SLPs were ASHA certified SLPs, they completed prerequisite coursework and met CAA practice standards, took a national Praxis examination, and earned at least 375 clinical clock hours. In addition, practicing SLPs have completed additional hours of direct service delivery following their schooling in their place of employment. On average, practicing SLPs also interacted clinically with 26 transgender clients whereas graduate students on average interacted with 3. Having additional interactions with clients and coursework exposure appeared to be effective methods to increase self-efficacy, similar to previous research (Pickering, 2016). The
experiences result in the higher perceived self-efficacy scores compared to graduate students.

In the area of soft skills, measured by the SE-12, minimal differences were noted between the SLPs and graduate students. According to Shollenbarger, “soft skills are a combination of interpersonal skills, emotional intelligence, and personal attributes—include work ethic, professionalism, courtesy, initiative, and communication” (The Importance of Soft Skills for Professional Success, 2019). Shollenbarger (2019) states that these skills are difficult to teach, making them favored amongst graduate program recruiters over grades and experience. In other words, it is likely that these skills are part of a university’s entrance or prerequisite criteria to admission. This theory would then favor more universally strong soft skills across both populations.

It should be noted that because the survey was posted to a voice List Serv and ASHA special interest groups, as well as Facebook pages, survey participants may have participated because they had an interest or more training and service with this population as compared to most general practice SLPs. This finding aligns with the ASHA code of ethics (2016) in which it states SLPs who interact with this (or any) population receive specific training and education. Therefore, the individuals participating in the survey seem to be a unique subset of SLPs in clinical practice. Meanwhile the graduate students are all in a learning paradigm, where they are not expected to be educated about every population and are supported by their clinical supervisors; the range of responses among graduate students matches this description.
Although we hypothesized that experience with individuals who are transgender would be predictive of self-efficacy for providing those types of services, this was not the only factor that seemed to be related. The regression model included all possible variables: number of transgender clients served, years of clinical experience, education level, level of learning about transgender services, AATMW score, and SE-12 score. Within this regression model, the learning about transgender services and the soft skills score seemed to be more related to confidence in serving this population. This supports the observation that the group of responders, particularly the SLPs, are unique in their interest, education, and specialization in this area of the field.

**Research Question #2** What do speech-language pathologists and graduate student clinicians know about providing services to individuals who are transgender?

It was hypothesized that practicing SLPs would be more familiar with evidence-based treatment approaches. SLPs who responded were familiar with a wide range of potential aspects of services, while graduate students showed a general lack of exposure. The differences in familiarity ratings were statistically significant, in favor of SLPs. Within their open-ended questions about tools and techniques, SLPs provided name-specific questionnaires such as the QOL, TVQ, MVQ, and VHI and even citations to support their approaches. Practicing clinicians appear well-informed of the current evidence surrounding treatment with this population. It is likely that SLPs who completed the survey represent a high achieving subgroup of SLPs which may have been influenced by where the survey link was posted. In contrast, graduate students reported very general
assessment and therapy areas that represented basic voice evaluation tools rather than specific techniques for individuals who are transgender. While SLPs listed numerous tools, graduate students typically only listed one or two and often referred to those tools by description rather than name.

A possible explanation for both the familiarity and technique results may relate to coursework exposure. Survey results indicated that less than 40% of graduate students received specific instruction for specific transgender techniques and a limited amount of exposure to actual individuals who are transgender. This suggests that exposure through coursework may be limited, and that SLPs have found other sources of information post-graduation to support their service delivery, including experience with actual transgender clients. These reports of limited course exposure are not surprising considering the wording of the current Knowledge and Skills Acquisition (KASA) standards. These standards state skills related to transgender services are recommended; however, there is not a requirement to include transgender communication content in any coursework or have clinical experiences with this specific population.

Some graduate students did express knowledge and exposure to assessment and treatment for individuals who are transgender. A possible explanation for this familiarity for some students may be in part because of practicum experiences that bridge coursework and clinical experiences. At the College of Saint Rose, for example, seven second-year graduate students compete a semester long clinical practicum for the Transgender Voice and Communication Modification Program at the Pauline K. Winkler
Speech-Language-Hearing Clinic. According to Pickering (2017), the practicum begins by learning about the transgender community, psychosocial issues, transgender and voice communication, and research (p. 118). Part of this learning process involves instruction in a voice disorders class on diaphragmatic breathing, techniques to reduce upper body tension, resonant voice therapy, and mindfulness. After learning about these techniques, members of the transgender community are invited into the classroom to present about their experiences. Students conduct interviews and provide intervention and provided feedback about their voices and execution of instructed techniques. The students in this practicum completed a five-question survey and reported that their knowledge increased following this experience. These findings suggest that bridging course content and clinical experiences can be beneficial for increasing knowledge surrounding transgender communication. Other programs, such as The University of Pacific City Oregon and La Trobe University, have included these types of immersive experiences for students as well. Even though other programs have not published their programming for teaching about individuals who are transgender, it is possible other programs also include these types of experiences. Based on graduate student responses, it appears programs such as Ithaca College, University of Rhode Island, University of North Dakota, University of Illinois, and Temple University have built this content into their programs. Clearly direct instruction in techniques and exposure to actual assessment and therapy sessions have helped graduate students move toward independent clinical practice and develop self-efficacy in this area of the field.
**Research Question # 3** What services do speech-language pathologists and graduate student clinicians provide to individuals who are transgender?

It was hypothesized that graduate students and SLPs would be employing evidence-based methods related to both treatment and assessment, since it is a relatively new area of the field. Graduate students and SLPs are providing treatment toward a variety of targets, but shared responses related to intonation, articulation, resonance, and pragmatics, and counseling, all determined to be evidence-based. It is important to remember that the clinical decisions made by graduate students are governed by supervisors who often have a special interest or training in this area. The practicing SLPs also seem to be part of an elite group of professionals who have additional training and experience in this area. Thus, it is likely not surprising that the individuals who responded to this survey are utilizing best practices.

Intonation was reported by many SLPs and graduate students a main domain of service delivery. That finding is consistent with Hancock’s (2014) report that, “intonation is commonly addressed in voice and communication feminization therapy” (p. 203), because intonation has the potential to influence “passing”. Those researchers found that one’s femininity rating can be increased by the use of upward intonations and fewer downward intonation patterns. According to Kim (2020), an overall increase in pitch variability behaviorally can be highly satisfactory. The findings suggest that monitoring inflections using an acoustic analysis such as Visi-Pitch to achieve a feminine voice quality. As Visi-Pitch was mentioned specifically by a number of SLPs and graduate
students in the current study, it appears that they have knowledge and access to the necessary technology to numerically quantify intonation changes and monitor progress.

Graduate students and practicing SLPs reported articulation as another main domain of service delivery. It’s been empirically demonstrated that there are gender-based articulation and prosody differences. According to Boonin (2006) “gender-linked articulation behaviors need to be seen as significant and appropriate matters for evaluation and exploration when engaging in the clinical endeavor of gender-appropriate speech modification” (p. 228). This includes using prolonged vowels, speaking in slower rates, and pausing more frequently (Boonin, 2006; Davies & Goldberg, 2006). Those researchers suggested collecting a speech-language sample and analyzing the sample by making qualitative comments about articulation and its impact on femininity. It is interesting that this technique is within the top five domains identified by SLPs and graduate students within the current survey, because the empirical base is more sparse than other areas of intervention. The current evidence base also provides very little detailed instruction for clinicians to provide treatment consistent with the identified gender norms.

The largest empirical base supporting assessment and intervention surrounds Lessac Madsen Resonant Voice Therapy (LMRVT) in working with this population (Davies et al., 2015, Gelfer & Dong, 2013, Dacakis et al., 2012, & Hancock and Garabedian, 2012), which is consistent with the current study’s findings. In addition to the relatively straightforward protocol for LMRVT, there is also an established protocol
of oral resonance created by Carew et al. (2007). In their protocol, they outline steps used by experienced SLPs to simultaneously train increased fundamental frequency, forward tongue carriage, and resonant voice therapy. The checklist of steps is explicit and concise and may be a reason why they are so heavily used. King et al. (2012) provided specific ranges of formants that affect voice perception, which paired with work on tongue carriage is designed to alter formant structures for these individuals. Using direct instruction, paired with visualization in spectrogram programs, appears to be a common method for training altered resonance and well-understood by the SLPs and graduate students in this study, as they frequently reported using these tools.

Semi-occluded vocal tract (SoVT) techniques were employed frequently by graduate students and SLPs in this study. SoVT is used to encourage efficient vocal fold vibration and is typically done by phonating through straws or tubes. Davies et al. (2015) provided a user-friendly sequence of sounds and how to phonate into a straw and cup of water to promote easy phonation (p.133). The amount of research, simple directions, and visual feedback provided through the straw or tube about the efficiency of the phonation, may contribute to why clinicians use these techniques so frequently.

Vocal Function Exercise (VFEs) are used to strengthen laryngeal musculature to improve voicing stamina (Stemple, 1984). They are completed twice a day in a series of four exercises: warm-up, stretching, contracting, and power exercises. Graduate students and clinicians both identified using VFEs with individuals who are transgender. Pickering et al. (2010) found that most transgender clients reported liking VFEs and that they
increased confidence in voice modification. Those in our study also reported using VFEs as part of a package in contrast to a standalone intervention. This finding is consistent with Pickering et al. (2010) who reported using VFEs to compliment resonant voice, lessons about inflection, articulation, language, and non-verbal communication. VFEs are commonly used with clients with a variety of voice disorders, so it makes sense that both SLPs and graduate students frequently listed this as a therapy technique.

Vocal health education was also a highly ranked service by graduate students and SLPs. According to Adler (n.d.), components of a vocal hygiene program for individuals who are transgender includes education about adequate hydration, conservative throat clearing, progressive relaxation, decreasing caffeine and citrus juices. Handouts pertaining to these measures are readily available on the ASHA website for free download. In addition, they are readily known by clinicians because they are used with patients who have a history of oral and laryngeal cancer or with patients who are vocal performers. Implementation of this type of education is a natural progression for most voice clinicians.

Breath support was another domain of service delivery, mostly identified by practicing SLPs. Both graduate students and SLPs noted education about speaking posture and abdominal breathing. According to Hancock (2020), direct breath work is important because the laryngeal musculature reacts to daily stress by “tensing and restricting the inspiration excursion” (p. 225). Without abdominal breathing, the voice quality can be shallow, strained, rough, and effortful. There are many visuals online that
depict how the diaphragm is affected by breathing patterns and posture to support both practicing clinicians and graduate students in this area of therapy.

Hancock and Garabedian (2013) recommended treatment goals that target pragmatic discourse or the use of expressive phrases and self-disclosure. The results of this study showed that both groups are providing services for pragmatics. More specifically they mention targeting gesture, presentation, and non-verbal communication. Davies et al. (2015) reported in instances where pragmatics are a priority for the client, clients should focus on specific contexts important to them or choose a communication partner’s mannerisms that they’d like to replicate. Once they have a target, they can compare and contrast observable differences and work to change their target behavior(s). Due to the subjectivity surrounding what constitutes as “typical” for women depending on culture, time, and region, it is interesting that pragmatics are a common area of intervention. Compared to other techniques that have specific protocols or procedures, it seems to be up to the clinician’s interpretation and judgement to configure how to target pragmatics.

While counseling is one of the eight domains of service delivery for SLPs and one that they reported using in this study, there is a limited amount of research related to service provision, both in general and with individuals who are transgender. Practicing SLPs and graduate students identified counseling as the second largest treatment domain in our study. According to Doud et al. (2019), when conducting their survey to identify counseling curricula, they found only 47% of graduate students took a course specific to
counseling and only 25% of participants received hands-on training (p.iii-iv). While Adler (2017) has documented that counseling skills are developed through routine self-reflection and hands-on practice, little is known about how these skills are fostered in graduate students and practicing SLPs, particularly in working with individuals who are transgender.

In summary, graduate students and SLPs are providing an array of interventions for individuals who are transgender. The practicing SLPs in particular, seem to be part of an elite group of professionals who have additional training and experience in this area. This may be contributing to the use of current and evidence-based interventions.

**Research Question #4** How do speech-language pathologists and graduate clinicians receive their training related to transgender populations?

It was hypothesized that participants would have received their training in a voice course given that in ASHA’s roles and responsibilities for SLPs, it pinpoints areas of communication need such as voice and counseling. The majority of participants reported taking an undergraduate and graduate course related to voice disorders broadly. At the graduate level, most transgender communication coursework was in a voice course. However, only about 30% of both groups had specific training in techniques for working with individuals who are transgender. The lack of specific training at the graduate level in particular is alarming and is likely a reflection of the lack of a specific standard within the KASA standards.
Because many clinicians and graduate students are not learning about transgender services in their graduate programs, they must seek other sources of information. It was hypothesized that graduate students would be likely to access university courses, scholarly articles, social media, and their supervisors/CFY mentors because of their access to those sources, including peer-reviewed resources through their university library and frequent contact with mentors. However, graduate students reported they would be most likely to access websites, scholarly articles, continuing education classes, and then their colleagues. These students seem to have identified potential sources of up-to-date information, like reputable websites, for use in their future careers. Students were not asked why they would be more likely to access one type of resource over another.

It was also hypothesized that SLPs would be the most likely to access CEUs, social media, and their colleagues given their ease of accessibility and stage in their careers. However, practicing SLPs reported they would be most likely to access websites, scholarly articles, continuing education classes, and then their colleagues. Clinical fellowship year mentors, blogs, social media groups, and university courses are less likely to be accessed. It’s logical that SLPs aren’t accessing a clinical fellowship mentor because they of their years of experience and completion of the their CFY year. A positive finding speaks to the SLPs use of peer-reviewed sources before anecdotal evidence, despite documented difficulties for working professionals in accessing peer-reviewed articles.
**Research Question #5** What could graduate programs do differently to educate speech-language pathologists’?

SLPs and graduate students were asked to provide suggestions for improving education related to working with individuals who are transgender and the recommendations were mixed. It was hypothesized that graduate students and SLPs would suggest clinical experiences, based upon Saywer et al. (2014) findings that only 5% of over 220 SLPs had ever worked with an individual who was transgender. Interestingly, the survey responses from most to least suggested were: lecture/seminar, vague, hands of experience, speakers, and not sure. Some graduate students were honest and adamant stating their current knowledge and clinical experience are “not sufficient”. A starting place recommended by many was simply to “be more open to talk freely about it”. Other graduate students praised their local institutions saying they didn’t have suggestions. Example responses include “Nothing. My master’s program at the University of Utah was incredibly thorough as we often saw TG voice patients in our student clinic” and “Not sure, Edinboro did a great job covering this population. Current have individuals of this population in clinic”. Per their report, it appears more programs than what are reported in the literature are bridging coursework and clinical experiences. From the familiarity ratings for assessment and treatment, various programs across the country seem to be including content about working with individuals who are transgender. Others could benefit and increase clinician preparedness by following student recommendations.
Reports of a desire to increase lecture/seminar content are consistent with the findings that only about 50% of participants had received coursework at the graduate level. Examples of responses addressing this need include “dedicate a portion of the general voice course to the assessment and treatment of transgender voice” and “offer some lectures in the voice course related to this or offer an elective and/or required course specifically in this area”. There is a consensus for wanting specific lecture content related to assessment and treatment. There were mixed responses on whether or not that lecture material should be mandated or elective.

The second most common recommendations were vague. They discussed a desire to receive additional resources without providing specifics of where or what those resources would look like. Examples of responses addressing this need include “talk more about it!” and “be more open to talk freely about it”. Given graduate students reported working with an average of three individuals who are transgender, it is not surprising they would like to gain more experience and knowledge. The University of Pacific City Oregon, the College of Saint Rose, and La Trobe University’s clinical immersion programs allow graduate students to have additional clinical opportunities at the graduate level. Each program has a group service delivery component, allowing for exposure to more than one individual who is transgender. Introducing similar programs to all graduate programs may meet the request and needs of future clinicians. Guest speakers who are transgender were also recommended. The College of Saint Rose reportedly invites members of the transgender community into the classroom to be guest speakers. As a result, Pickering (2016) reports that cultural competence increases when
clinicians have opportunities to hear those who are transgender share their stories (p. 116). For programs where an immersion-type clinical experience is not possible, this exposure to guest speakers may be a good alternative.

Those who reported feeling unsure were graduate students still completing their coursework. Although participants in this study reported their status as graduate students, it was not clear whether they were first- or second-year students, nor was the extent of their clinical experience finely stratified. It is likely that they felt unable to make a recommendation because they hadn’t completed their anticipated coursework in this area. An anonymous response supporting that hypothesis include “I’m not fully complete with my Master’s program so I am unable to answer this”. However, in their graduate programs, students work under the direct supervision of a SLP, where they are given opportunities to observe and work directly with the supervisor’s caseload. According to Pasuopathy and Bogschutz (2013), the supervisor has the ability to foster a positive learning environment where the student can gain confidence and hone their clinical skills. Moreover, researchers found that the more positive the supervisory experience, the more positive and confident students were in their ability to reason and exercise their clinical skills. The process and requirements of supervision, feedback, and clinical practicum experiences are beneficial in shaping future professionals (p.151). If positive clinical experiences working with individuals who are transgender can be offered, students are likely to develop confidence, knowledge and skills for serving this population.
Research Question #6 How do speech-language pathologists and graduate clinicians feel about working with individuals who are transgender?

ASHA has a nondiscrimination statement which includes “sexual orientation” as a protected status and encourages clinicians to develop cultural competence to meet ethical service delivery standards. However, it’s up to the clinicians’ discretion to determine their self-efficacy and cultural competency. Said differently, a clinician may refrain from servicing a particular client if they do not feel confident but are then expected to make a referral to another professional. Sawyer et al. (2015) surveyed 228 practicing SLPs to determine their confidence in service delivery with individuals who are transgender. The “majority of the speech-language pathologists indicated that providing services to transgender individuals was within their scope of practice but felt improperly prepared to provide assessment and treatment” (p. 146). In contrast, the results of this study indicated that SLPs perceived themselves confident in service delivery. Many even provided specific names of assessment materials, descriptions of therapeutic techniques, and citations supporting their methods of interventions. A contributing factor for this large discrepancy likely is twofold. One may be a reflection of the small population size and two, the audience of SLPs. In this survey, the audience of practicing SLPs in this survey received additional training and served this population on a regular basis.

SLPs and graduate students completed the Attitudes Toward Transgender Men and Women (AATMW) scale as part of this survey. It is a reliable and valid measure in the literature of attitudes toward transgender individuals. SLPs had statically higher AATMW scores, reflecting attitudes that were less biased. Conversely, graduate students
appear to have honestly completed the scale. Their scores speak to some bias in some individuals within the group; they had a wider range of scores observed. According to those that created and validated the scale, the report of bias could be a reflection of the gender role beliefs and homophobia. It may also have roots related to political orientation and their own gender. Those who completed the survey were not asked to disclose their gender or political views. A final possible explanation could relate to exposure to people of different backgrounds. It is likely that practicing SLPs have been exposed to individuals from a variety of backgrounds, while graduate students may have had limited experiences. This was true in the numbers of transgender clients each group had served; SLPs had served, on average, 26 clients, while graduate students had served, on average, only 3 clients. Graduate students ranged from serving 0-60 clients, with most serving fewer than 5. Practicing SLPs ranged from serving 1-100, with many serving more than 20 individuals who are transgender.

In addition to the AATMW, some feelings and attitudes were disclosed indirectly when participants offered suggestions to modify graduate programs. One participant spoke to her experiences as a graduate student with a professor who she believes reinforces stereotypes and provides inaccurate information. Moreover, she disclosed her concern for the cultural competency of members in her cohort. She wrote, “The professor who works with this population at my school is not trans-competent. By trans-competent, I mean: having a sound understanding of what transgender is, demonstrating knowledge of common terminology and cultural conventions necessary for respectful interaction with transgender people, and having awareness of the healthcare needs unique to trans
clients. I am concerned she has been teaching students inaccurate information and I don't yet know if this includes inaccurate clinical praxis. People treating transgender clients should understand fundamental concepts about gender, sex, and transgender, such as the difference between sex and gender. Otherwise, they will not fully comprehend their clients' needs and know how to interact with them in a way that does not cause the client distress. … A professor who is not trans-competent may reinforce stereotypes from popular culture, teach students to think of transition in terms of harmful standards for cis-heteronormative gender expression, or even worse, promote the old gatekeeping "transgender narrative" that has been so hard for the transgender community to throw off. … It concerns me that students will leave these programs feeling they have cultural competency and be unreceptive to input from minority clients…” While she doesn’t speak first-hand about her own feelings about working with this population, she feels inaccurate information continues to propagate and influence the knowledge and feelings of future clinicians.

Feelings of uncertainty were of that of the majority. Another graduate student said “at very least, 2-3 weeks of our voice disorders course should have been used to address transgender vocal modification, counseling, and cultural sensitivity training”. It could be interpreted that this student feels the time spent on the subject matter was inadequate to meet his/ her needs in this domain. A graduate student whose response was part of the minority stated “Not sure, Edinboro did a great job covering this population. Current have individuals of this population in clinic”. It appears for this student, having experience serving this population helped them feel confident.
Limitations and Future Directions

This study only surveyed 27 speech-language pathologists (SLPs). A larger-scale study of SLPs, capturing a broader range of practitioners, would provide a better assessment of SLPs experience, knowledge, and feelings related to transgender communication. The results of this study cannot be generalized to the SLP population as a whole. Further, given the electronic nature of the survey, follow-up questions were not possible, but would have provided additional information about their recommendations, feelings, and demographic information. It would have also provided an opportunity for graduate students to comment on whether or not their program had bridged coursework and clinical experiences. This information would provide valuable information about the effectiveness of current teaching pedagogy, as well.

While this study focused on the perceptions of speech-language pathologists and graduate students, it could be informative to explore the perceptions of those who receive these services. A future study could survey or interview individuals who are transgender to gain their perspectives.

Conclusion

Speech-language pathologists (SLPs) must have a strong knowledge-base to provide equitable care to individuals in the transgender community (Davies & Goldberg, 2008). Yet, they historically feel unprepared (Sawyer, 2015). When exploring factors influencing self-efficacy, this study found that practicing SLPs had greater perceived self-
efficacy, less bias, knew about and provided a variety of evidence-based services, and served multiple transgender clients. In contrast, graduate students had lower perceived self-efficacy, more bias, but knew about and provided a variety of evidence-based services, even though they served less than three transgender clients. To improve education related to this area of the field, SLPs and graduate students recommended specific training, guest speakers, and additional clinical experiences to enhance their current programs. It’s important for graduate programs to consider these recommendations to ensure future speech-language pathologists feel equipped to provide high-quality services.
REFERENCES


APPENDICES

Appendix A

Cover Letter for Survey
Dear Survey Participant,

My name is Ashley Wolosek and I am currently a second-year graduate student in the Communication Sciences and Disorders Department at University of Wisconsin – Eau Claire. You are invited to participate in my thesis research entitled “Speech-language pathologist course, clinical, and perceived self-efficacy with transgender voice therapy”. The primary purpose of this survey is to identify skills, knowledge, and experiences of graduate students and practicing SLPs who are providing services to clients who are transgender. This survey will be beneficial to graduate programs training graduate clinicians and practicing professionals by providing valuable information about past and current skills, knowledge, and experiences working with individuals who are transgender. Information obtained and may also provide potential ways to improve service-delivery practices for individuals who are transgender. This study is supervised by Dr. Abby Hemmerich and intended to be completed during the fall of 2019.

You are receiving this email because you are a CSD graduate student or practicing Speech-language pathologist. This study involves an anonymous survey which should require no longer 15-20 minutes to complete. By clicking the survey link, you are giving your informed consent to participate. You must be at least 18 years old to participate. No identifying information will be recorded, and your participation will remain anonymous. There are no direct benefits to you for participating in the survey; results of this study may assist in restructuring graduate program coursework, clinical experiences, and identifying soft skills important to interactions with individuals who are transgender. Possible risks include potential inconvenience, time, and fatigue. Your participation in this survey is voluntary. You may choose to exit the survey at any time without penalty.

If you are interested in participating, please click on or copy and paste the following hyperlink and it will direct you to the survey.

Qualtrics Survey Link: https://uweauclaire.qualtrics.com/jfe/form/SV_9zOa46GcNXjqhWR

Benefits of participation in this survey include improving knowledge in the area of speech-language pathology as it relates to service delivery with individuals who are transgender. Additional benefits include helping structure graduate training programs for students and practicing clinicians to increase their self-efficacy in service delivery. While reflecting on your skills, knowledge, and experiences may evoke various feelings associated with those experiences, no other substantial risks are anticipated. Participation is completely voluntary and you may withdraw from the survey at any time. The survey will close on 9/30/2019.

If you have any further questions or concerns about your rights as a participant in this study, please contact Dr. Axelrod at axelromi@uwec.edu. If you have any questions regarding the study, please contact myself at ottim0539@uwec.edu or my primary faculty mentor Dr. Hemmerich at hemmeral@uwec.edu.

Appendix B
Survey Construction

Thesis

Start of Block: Demographics

You are invited to participate in the study “Speech-language pathologist course, clinical, and perceived self-efficacy with transgender voice therapy." The primary purpose of this survey is to identify skills, knowledge, and experiences of graduate students and practicing SLPs who are providing services to clients who are transgender. This survey will be beneficial to graduate programs training graduate clinicians and practicing professionals by providing valuable information about past and current skills, knowledge, and experiences working with individuals who are transgender. Information obtained may also provide potential ways to improve service-delivery practices for individuals who are transgender. The survey will take approximately 15 to 20 minutes to complete. By clicking on the link to the survey, you have given your informed consent to participate. Your responses will remain anonymous.

Page Break
This portion of the survey will be used to obtain demographic information about your education.

Please identify your highest educational level

- Bachelor's Degree
- Master's Degree
- SLPD/CScD/DSLp
- PhD

Where did you obtain your Bachelor's Degree?

________________________________________________________________

Are you obtaining your Master's Degree?

- Yes
- No

Where did you obtain your Master's Degree?

________________________________________________________________
Are you pursing your PhD?

- Yes
- No

Where did you obtain you PhD?

______________________________

Do you currently have your ASHA Certification of Clinical Competence (CCC)?

- Yes
- No
- Clinical Fellowship Year (CFY)

Page Break
End of Block: Demographics

Start of Block: Clinical Experiences

This portion of the survey will be used to obtain information about your clinical experiences.

<table>
<thead>
<tr>
<th>How many years have you been practicing in the field of Speech-Language Pathology?</th>
<th>Graduate Student</th>
<th>Experienced SLP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years</td>
<td>0</td>
<td>14</td>
</tr>
</tbody>
</table>
In what setting(s) do you currently practice? (Check all that apply)

☐ Adult Care

☐ Adult Outpatient

☐ B-3

☐ Group Home

☐ Home Health

☐ NICU

☐ Pediatric Outpatient

☐ Preschool

☐ School

☐ Skilled Nursing Facility

☐ Subacute Care

☐ University

☐ School

☐ Not currently practicing

☐ Other __________________________________________
In what setting(s) have you previously practiced? (Check all that apply)

☐ Adult Care

☐ Adult Outpatient

☐ B-3

☐ Group Home

☐ Home Health

☐ NICU

☐ Pediatric Outpatient

☐ Preschool

☐ School

☐ Skilled Nursing Facility

☐ Subacute Care

☐ University

☐ Not currently practicing

☐ Other ________________________________________________
End of Block: Clinical Experiences

Start of Block: Experiences and Familiarity

This portion of the survey is used to obtain information about your experiences and familiarity with working with voice clients who are transgender.

Have you ever worked clinically with someone who has a voice disorder?

- Yes
- No
- Only in my graduate program

Have you had clinical experience(s) with transgender clients?

- Yes
- No
<table>
<thead>
<tr>
<th>Have you ever provided assessment with a transgender voice client in the area(s) of</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Articulation</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>Volume and Intensity</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>Intonation and Breath Support</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>Resonance</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>Speaking Rate</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>Language</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>Pragmatics</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>Vocal Health</td>
<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>Counseling</td>
<td>〇</td>
<td>〇</td>
</tr>
</tbody>
</table>
Do you use any of the following when working with someone who is transgender?

☐ Forward Tongue Carriage

☐ Lip Spreading/ Retraction to Change Resonance

☐ Pacing

☐ Resonant Voice

☐ Semi-Occluded Vocal Tract Techniques

☐ Spectrograms

☐ Visi-Pitch/ Visualization

☐ Vocal Function Exercises

☐ Other ____________________________________________________
Have you ever provided treatment with a transgender client in the area(s) of

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Articulation</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Volume and Intensity</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Intonation and Breath</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Support</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Resonance</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Speaking Rate</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Language</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Pragmatics</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Vocal Health</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Counseling</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

How many transgender clients have you served?

1  11  21  31  41  51  60  70  80  90  100

<table>
<thead>
<tr>
<th>Number of Transgender Clients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
Please indicate your familiarity with these treatment areas for individuals who are transgender.

<table>
<thead>
<tr>
<th></th>
<th>Not Familiar</th>
<th>Familiar</th>
<th>Very Familiar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changing fundamental frequency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Altering breathiness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changing articulation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocabulary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resonance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prosody</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loudness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocal health</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counseling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pragmatics</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**End of Block: Experiences and Familiarity**

**Start of Block: Coursework**

This portion of the survey is used to obtain information about your undergraduate and graduate coursework involving voice disorders, transgender communication, and treatment or assessment of transgender voice.
Did you take a course in voice disorders in your undergraduate program?

- [ ] Yes
- [ ] No
- [ ] Unsure

Did any of your undergraduate coursework discuss transgender communication?

- [ ] Yes
- [ ] No
- [ ] Unsure

Did you receive undergraduate coursework specific to treatment or assessment of transgender voice clients?

- [ ] Yes
- [ ] No
- [ ] Unsure

List the courses that discussed transgender communication.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Have you ever learned about working with transgender client(s) in the area(s) of

<table>
<thead>
<tr>
<th>Area</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changing fundamental frequency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Altering breathiness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changing articulation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocabulary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resonance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prosody</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loudness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocal health</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counseling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pragmatics</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Did you take a course in voice disorders in your graduate program?

- Yes
- No
- Unsure

Did any of your graduate coursework discuss transgender communication?

- Yes
- No
- Unsure

Did you receive graduate coursework specific to treatment or assessment of transgender voice clients?

- Yes
- No
- Unsure

List the graduate courses that discussed transgender communication.

________________________________________________________________

What could graduate programs do differently to educate speech-language pathology graduate student clinicians about transgender communication?

________________________________________________________________
This portion of the survey consists of 24 questions are a direct work of Billard (2018) Attitudes Towards Transgender Men and Women Rating Scale (ATTM). The scale was developed to assess clinician attitudes and perceptions related to serving clients who are transgender.

Transgender men are emotionally unstable

- [ ] Strongly agree
- [ ] Agree
- [ ] Somewhat agree
- [ ] Neither agree nor disagree
- [ ] Somewhat disagree
- [ ] Disagree
- [ ] Strongly disagree
Transgender men will never really be men

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree

Transgender men are not really men

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree
Transgender men are only able to look like men, but not be men

○ Strongly agree
○ Agree
○ Somewhat agree
○ Neither agree nor disagree
○ Somewhat disagree
○ Disagree
○ Strongly disagree

Transgender men are unable to accept who they really are

○ Strongly agree
○ Agree
○ Somewhat agree
○ Neither agree nor disagree
○ Somewhat disagree
○ Disagree
○ Strongly disagree
Transgender men are trying to be someone they're not

○ Strongly agree
○ Agree
○ Somewhat agree
○ Neither agree nor disagree
○ Somewhat disagree
○ Disagree
○ Strongly disagree

Transgender men seem absolutely normal to me

○ Strongly agree
○ Agree
○ Somewhat agree
○ Neither agree nor disagree
○ Somewhat disagree
○ Disagree
○ Strongly disagree
Transgender men are denying their DNA

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree

Transgender men cannot just "identify" as men

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree
Transgender men are misguided

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree

Transgender men are unnatural

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree
Transgender men don't really understand what it means to be a man

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree
Transgender women will never really be women

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree

Transgender women are only able to look like women, but not be women

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree
Transgender women are not really women

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree

Transgender women are trying to be someone they're not

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree
Transgender women are unnatural

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree

Transgender women don't really understand what it means to be a woman

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree
Transgender women cannot just "identify" as women

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree

Transgender women are unable to accept who they really are

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree
Transgender women only think they are women

○ Strongly agree
○ Agree
○ Somewhat agree
○ Neither agree nor disagree
○ Somewhat disagree
○ Disagree
○ Strongly disagree

Transgender women are defying nature

○ Strongly agree
○ Agree
○ Somewhat agree
○ Neither agree nor disagree
○ Somewhat disagree
○ Disagree
○ Strongly disagree
Transgender women are denying their DNA

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree

There is something unique about being a woman that transgender women can never experience

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree

Page Break
This portion of the survey is used to obtain information about your self-efficacy (confidence and certainty) in providing services to a client who is transgender. It also includes 12 questions that were adopted from Axboe et al. (2016) Self-Efficacy Scale (SE-12) For Medical Professionals.
These questions were adopted from Axboe et al. (2016) Self-Efficacy Scale (SE-12) For Medical Professionals.
<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Not Relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>When working with a client who is transgender, how certain are you that you are able to successfully listen attentively without interrupting or changing the focus of the conversation?</td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When working with a client who is transgender, how certain are you that you are able to successfully encourage the patient to express their thoughts and feelings?</td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
When working with a client who is transgender, how certain are you that you are able to successfully demonstrate appropriate non-verbal behavior (eye contact, facial expression, placement, posture, and voicing)?

When working with a client who is transgender, how certain are you that you are able to successfully show empathy (acknowledge the patient's views and feelings)?
These questions were adopted from Axboe et al. (2016) Self-Efficacy Scale (SE-12) For Medical Professionals.
<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Not Relevant</th>
</tr>
</thead>
</table>

When working with a client who is transgender, how certain are you that you are able to successfully clarify what the patient knows to communicate the right amount of information?

When working with a client who is transgender, how certain are you that you are able to successfully check the patient's understanding of the information given?
When working with a client who is transgender, how certain are you that you are able to successfully make a plan based on shared decisions?

When working with the client who is transgender, how certain are you that you are able to successfully close the conversation by assuring that the client's questions have been answered?
These questions were adopted from Axboe et al. (2016) Self-Efficacy Scale (SE-12) For Medical Professionals.
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Not Relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>When working with a client who is transgender, how certain are you that you identify the issues of the patient wishes to address during the session?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When working with a client who is transgender, how certain are you that you are able to urge the patient to expand on his or her problems/worries?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When working with a client who is transgender, how certain are you that you are able to successfully make an agenda or plan for a session?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When working with a client who is transgender, how certain are you that you are able to successfully listen attentively without interrupting or changing the focus of the conversation?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
How confident are you in providing services to someone who is transgender in the following areas?

<table>
<thead>
<tr>
<th></th>
<th>Extremely uncertain</th>
<th>Moderately uncertain</th>
<th>Slightly uncertain</th>
<th>Neither uncertain nor confident</th>
<th>Slightly confident</th>
<th>Moderately confident</th>
<th>Extremely confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Articulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume and Intensity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pitch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intonation and Stress Patterns</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breath Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resonance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaking Rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pragmatics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocal Health</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counseling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

End of Block: SE-12
Start of Block: Knowledge of Assessment and Treatment

This portion of the survey is used to obtain information about your knowledge of assessment and treatment of voice clients who are transgender.

Assume you have a client who is transgender coming to see you for an evaluation. What might you use or include in your evaluation?

Assume you have a client who is transgender coming to see you for treatment. What might you use or include in your therapy?
This portion of the survey is used to obtain information about resource obtainment.

Please indicate which of the following sources have provided you with information regarding individuals who are transgender.

☐ Clinical Fellowship Year Mentor

☐ Colleagues

☐ Continuing Education (workshops, lectures, etc.)

☐ Blogs

☐ Social Media Groups (Facebook, Twitter, etc.)

☐ Scholarly Articles

☐ University Courses (undergraduate or graduate)

☐ Websites (ASHA or WPATH)

☐ Other ____________________________________________

☐ I have not received external information
Please indicate the likelihood that you will seek new information about transgender communication from the following sources.

<table>
<thead>
<tr>
<th>Source</th>
<th>Extremely likely</th>
<th>Somewhat likely</th>
<th>Neither likely nor unlikely</th>
<th>Somewhat unlikely</th>
<th>Extremely unlikely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Fellowship Year Mentor</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Colleagues</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Continuing Education (workshops, lectures, etc.)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Blogs</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Social Media Groups (Facebook, Twitter, etc.)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Scholarly Articles</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Websites (ASHA or WPATH)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>University Courses (undergraduate or graduate)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
Please indicate the likelihood that you will seek new information about transgender communication from the following sources.

<table>
<thead>
<tr>
<th>Source</th>
<th>Extremely likely</th>
<th>Somewhat likely</th>
<th>Neither likely nor unlikely</th>
<th>Somewhat unlikely</th>
<th>Extremely unlikely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Fellowship Year Mentor</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Colleagues</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Continuing Education (workshops, lectures, etc.)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Blogs</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Social Media Groups (Facebook, Twitter, etc.)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Scholarly Articles</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Websites (ASHA or WPATH)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>University Courses (undergraduate or graduate)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>