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Voice Therapy Techniques for Male-to-Female versus Female-to-Male Transgender Individuals and Stereotypical Gender Beliefs that Affect these Techniques

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Abstract

This research was conducted to determine the differences and similarities between the therapeutic techniques used with male-to-female versus female-to-male transgender voice clients resulting from their existing and potentially changing anatomy and physiology. It was also conducted to determine the potential impacts of gender stereotyping on therapeutic techniques and a client's therapeutic course. A review of the literature suggests that although there are quite a few similarities between the therapeutic techniques of male-to-female and female-to-male voice clients, there are crucial differences in these techniques that must also be considered. A few of the differences include considering a degree of change based on the client's original vocal capabilities and qualities, the ways in which pitch can be elevated or decreased, and the different places in which the client must resonate their voice. Additionally, this review reveals that a speech-language pathologist who is not educated in gender diversity or who has their own biases on gender, may negatively impact the course and progress of their client. For this reason, speech-language pathologists should take the time to educate themselves about the LGBTQ community, gender biases, and societal ideologies that may harm their clients. They should also remove their own bias and idea of gender from their therapeutic courses of action and allow the client to express their own wants and needs regarding their voice and communication skills. Future research needs to be conducted regarding the long-term effects of vocal therapy for female-to-male individuals, as most research has been heavily focused on male-to-female voice changes and long-term effects.

Introduction

The biggest complaint that transgender clients have relating to their voice is that their pitch does not match their perceived gender identity. For clients transitioning from female to male, their pitch can be more easily changed using hormones. This can cause an increase in the size of the larynx and therefore, may allow them to speak at a lower pitch. However, clients transitioning from male to female do not have as easy of a route to increase pitch. They can take hormones as well, but once the larynx and vocal folds have grown they cannot decrease in size. For this reason, hormones alone are not usually adequate in elevating the vocal range for a male-to-female client. The confliction of having a voice that does not match one's gender identity can manifest itself in the forms of mental and emotional distress. Therefore, any therapeutic approaches used by the speech-language pathologist should focus both on the physical health of the client (regarding the ranges of the vocal folds and larynx) as well as the mental health of the client. The goal should be to maintain a vocal range that does not put too much stress on the larynx and makes the client feel more aligned with their gender identity.

Pitch, however, is not the only aspect of voice that a transgender client may have problems with. They may additionally struggle in aspects such as the way in which they arrange a conversation, their behavior, and their nonverbal communication. Many clients wish to "pass" or be recognized as the opposite gender by society. Though passing itself is not a harmful notion, the client's ideas of what is feminine or masculine may not align with society's idea or the speech language pathologist's idea of these aspects. This may further complicate their therapeutic course. The client, members of our society, and the speech-language pathologist may have their own views of what communication characteristics align with femininity and masculinity. Since speech-language pathologists use evidence-based practice to guide their

practice, they must consider the client perspective. However, since we are lacking in external scientific evidence for transgender voice therapy and cultural ideas of gender are evolving, speech-language pathologists may rely on their own notions of what is masculine or feminine. Since this may not align with the client's ideas or result in their ability to pass within the client's culture, it may frustrate their clinical course.

The purpose of this study is to examine the literature and determine the similarities and differences between the therapeutic techniques used with male-to-female versus female-to-male transgender voice clients as well as the potential impacts of gender stereotyping on therapeutic techniques and the client's therapeutic course.

History and Definition of Voice Therapy for Transgender Individuals

What Does it Mean to be Transgender?

According to Britannica Academic, transgender is a term that is used by individuals "whose gender identity varies from that traditionally associated with their apparent biological sex at birth" (Tauches, 2020). It should be noted, however, that there is no universal meaning for the word *transgender;* therefore, it is difficult to determine how many people define themselves as transgender, but recent estimates show that between one and three percent of the U.S. population consider themselves transgender (Tauches, 2020). Another term often used is *transsexual*, which refers to individuals who individuals who identify as a gender that does not match their biological sex but do not undergo gender reassignment surgery.

When mentioning individuals who are transgender, the two main types are male-to-female or female-to-male. Male-to-female (MTF) individuals are those who were born male but decided to transition to become female. In contrast, female-to-male (FTM) individuals are those who were born female but decided to transition to become male. Transgender individuals may

simply choose to identify as a gender opposite of the one they were assigned to at birth, or they may choose to go as far as committing to a gender reassignment surgery. They do not have to go through this surgery, however, in order to be considered transgendered. Therefore, the process of transitioning can be as simple as using different pronouns to identify oneself or as complex as getting reconstructive surgery to match their gender identity. It is a large spectrum that should be given consideration by all, especially clinicians working with transgender individuals.

Important Terms

In order to fully understand what it means to be transgender, clear distinctions must be made between sex and gender as well as sexual orientation. Sex is biological, meaning that an individual's X and Y chromosomes determine this trait along with their reproductive organs. Gender, on the other hand, is “the set of traits and behaviors that are traditionally associated with a particular sex” (Tauches, 2020). While sex is biological, gender is socially constructed. An individual’s gender identity applies to the deep-seated way in which an individual identifies themselves, whether that be female, male, or nonbinary. A cisgender individual is a person who feels that their individual personality and their gender agrees with their biological sex. An individual who identifies as nonbinary does not conform to either male or female ideologies and may consider themselves neither male nor female or somewhere in between. One aspect that influences transgender individuals and how voice therapy is put into place is the gender binary. The gender binary is “a socio-political system of gender that endorses only two possibilities – male *or* female – and sees these gender categories as discrete and mutually exclusive” (Adler, Hirsch, & Pickering, 2018). Gatekeepers may also prevent transgender individuals from receiving the support and care that they need. A gatekeeper is a

"mental health professional...[who] block[s] transgender clients from receiving medical care" (Lev, 2009).

What is Transgender Voice Therapy?

Transgender voice therapy is geared towards transgender individuals who are looking to change their voice and communication to match their self-perceived gender. Speech-language pathologists are the clinicians who deliver this voice therapy (ASHA Scope of Practice, 2020). Voice therapy for this population primarily focuses on aspects such as pitch, resonance, intonation, rate, volume, and nonverbal sounds such as laughing, crying, and coughing. Regarding voice therapy, pitch refers to the characteristics of a specific sound and is controlled by the speed of the vocal folds' vibration, which in turn, controls how high or low the sound is. Resonance is "selective amplification and filtering of the complex laryngeal tone by the cavities of the vocal tract after that tone has been produced by vibration of the vocal folds" (Boone, McFarlane, Von Berg, & Zraick, 2014, p. 290). In other words, resonance refers to "the acoustic characteristics of speech, which are impacted by the changing shape of the vocal tract" (Adler, Hirsch, & Pickering, 2018). Resonance is what makes one voice distinguishable from another voice. Intonation describes the changes in pitch that are usually utilized when the speaker is using groups of words and sentences. For example, when asking a question, an individual usually uses a rising intonation to communicate that they are inquiring information and not stating it. Rate refers to how quickly an individual speaks, or how fast, that an individual speaks. Also, when dealing with speech therapy, volume may refer to "a voice that is clear and carries naturally and effortlessly" (Myers & Finnegan, 2015). Nonverbal communication may include facial expressions, posture, and other forms of body language in order to convey a meaning.

History of transgender voice therapy.

The first report of voice therapy in a transgender individual took place over 40 years ago (Adler, Hirsch, & Pickering, 2018). Prior to the year 2006, there had been little changes and advancements made to voice therapy for transgender voice clients; however, since then, more and more advancements have been made. For this reason, the history of transgender voice therapy will be split pre and post 2006. This is mainly due to the creation of the Transsexual Voice Questionnaire (Davies & Goldberg, 2006), which was created in 2006 as a way for transgender individuals to test their own voice and gender perception.

Early research before 2006. There has been a considerable lack of research, case studies, and literature reviews regarding voice therapy in transgender individuals earlier than 2006. Prior analyses on the modification of both voice and communication have concluded that growth in speaking fundamental frequency alone was significant enough to positively affect listener perception of gender for male-to-female individuals, including changes in intonation (Adler, Hirsch, & Pickering, 2018).

Prior to 2006, there was only one study that investigated the vocal modifications in female-to-male individuals (Van Borsel, De Cuypere, Rubens, & Destaerke, 2000). With research on transgender voice and communication modification on the rise, more research articles were published regarding these therapies for male-to-female individuals. In 1997, Oates and Dacakis addressed analyses on communication and vocal services for transgender individuals by writing about:

> "(a) differences between men and women's voices; (b) affective features of speaking that effect gender perception; (c) vocal characteristics associated with transgender voice; (d) biases concerning men's and women's voices; and (e) laryngeal surgery to modify

fundamental frequency and pitch of male-to-female individuals" (Adler, Hirsch, & Pickering, 2018).

Additionally, Oates and Dacakis recommended that voice therapy for male-to-female individuals should "address increasing pitch to a minimum of 155 Hz, increasing resonance frequency, decreasing loudness, increasing breathiness of voice, and altering the flow of tone" (Adler, Hirsch, & Pickering, 2018).

Following the research done by Oates and Dacakis, further articles were published that explained alterations of both voice and communication. In 2002, Freidenberg provided supplementary data on features of interference, like life experience, the method of transition, guidelines of care, and effective methods of therapy (Freidenberg, 2002). As a result of this research, speech-language pathologists began realizing that transgender voice therapy can have a direct effect on how a transgender client's self image. This may be because they had noticed that even with clients reaching the goals that the speech-language pathologist had assigned them, they still appeared to be dissatisfied with their vocal and communication qualities and still perceived themselves as their assigned sex due to lack of meeting societal expectations. For this reason, the speech-language pathologist may need to address this initially before deciding to treat their client.

Additionally, various international programs that center their attention on verbal language and communication for the transgender community have grown, especially with male-to-female individuals. However, it wasn't until the late 1980s and early 1990s that clinicians and individuals majoring in Communication Disorders began focusing on vocal therapy for transgender individuals (Andrews, 1999).

History post 2006. Since 2006, there has been a considerable growth in research regarding transgender voice and communication. This research contains proof that advocates for voice and communication therapy techniques for male-to-female clients. Additionally, more modern experiments of voice, articulation, and language have been conducted (Adler, Hirsch, & Pickering, 2018). There is distinct proof that suggests that transgender females can raise their fundamental frequency up to 180 Hz, the average frequency of cisgender females (Dacakis 2008). Since the research done by Dacakis in 2008, voice and communication therapy for transgendered individuals has grown; however, the fact that the majority of research occurred recently negatively affects a therapist's ability to choose a variety of interventions that are thoroughly researched.

In 1979, the World Professional Association for Transgender Health was incorporated to advocate for clinical care, development, analysis, support, procedures, and appreciation in the transgender community. Today, the WPATH consists of professionals disciplined in medicine, psychology, law, social work, counseling, psychotherapy, family studies, sociology, and speech pathology (Adler, Hirsch, & Pickering, 2018). Though WPATH published its Standards of Care in 1979, it has continued to update and improve upon these standards to better help the health of the transgender community. In 2011, WPATH added voice and communication intervention in its Standards of Care (WPATH, 2017). The most updated version of the Standards of Care recommends more personalized therapy and intervention methods.

This updated version also recommends a more complete agenda for voice and communication alterations based on both professional and patient preference (Adler, Hirsch, & Pickering 2018). For example, it centers on the patient's own perception of their voice and

gender rather than them passing based on societal standards of gender. WPATH's standards state the speech-language pathologists should focus on "vocal hygiene, voice, resonance, articulation, language, nonverbal communication, and life experiences when working with transgender clients" (WPATH 2017). In other words, the new aim of therapy does not necessarily focus on raising or lowering pitch alone, but to also teach the client how to breathe properly before speaking, express themselves in a way that is more suitable to their perceived gender, and to work on the loudness and tone focus of their voice among other aspects. Also, in 2011, the WPATH established the Standing Committee on Voice and Communication. As of 2020, the newest version of WPATH's Standards of Care, version 8, is being written (Adler, Hirsch, & Pickering, 2018).

One aspect that should be emphasized is that resonance, and not just pitch, should be a focus of therapy. Since 2015, there have been an additional eight articles explaining the WPATH's aim on voice and communication therapy for transgender clients. The American Speech-Language-Hearing Association held a conference in Denver, Colorado in 2015 where ASHA's Special Interest Group 3, *Voice and Voice Disorders,* promoted an exclusive presentation over communication and vocal therapy strategies for transgender individuals (Adler, Hirsch, & Pickering, 2018). Furthermore, in October of 2017, ASHA's Special Interest Group 10, *Perspectives on Issues in Higher Education,* centered its subject matter on voice and communication modification for transgender patients. With clinical analysis and studies expanding, many speech pathologists now know to start vocal and communication therapies by first focusing on resonance – which is how the voice is changed by the anatomical structures above the vocal folds. It can also augment sounds and add to the overall vocal characteristics of the speaker. For this reason, two speakers may have the same pitch, but resonance is what

distinguishes their two voices. Previously transgender voice therapy would focus primarily on pitch. In terms of speaking, resonance is what makes the voice distinct.

Currently, documents centering on female-to-male individuals have been published, adding to knowledge on transgender voice therapy for both main groups of trans clients (Adler, Hirsch, & Pickering, 2018). In the past, most studies have been focused on male-to-female clients, but an increasing amount of research is being done to help treat female-to-male individuals.

Overall, we are still lacking in research for transgender voice clients. For example, we need more research to be done on society's more current views of the gender binary, as this can have a huge impact on the therapeutic course of a client. While there is adequate research on how language can be a target for intervention, there is still not enough information on how language relates to public perception of a transgender client. While there is an increasing amount of research (in general) for voice and communication therapy for Male-to-Female and Female-to-Male transgender clients, there is still a significant lack in research for voice and communication therapy for gender nonconforming individuals.

Expanding clinical knowledge. Today, speech-language pathologists have access to increasing amounts of sources that advocate for voice and communication therapy, especially for male-to-female patients. However, in order to adequately help clients who are transgender, speech-language pathologists must be ethical and aware of different cultures and viewpoints (ASHA, 2020). Hancock and Haskins advise that understanding the LGBT community, the physical and mental wellness of transgender individuals, and how voice and communication affects these aspects is the best way to become more culturally aware (Hancock and Haskins, 2015).

In 2015, Hancock also investigated the ethics behind voice modification and other therapies for transgender and nonbinary clients and concluded that the more society tries to gain knowledge about this population, the more this population may be assisted (Hancock & Haskins, 2015). Today, studies are being conducted in order to help transgender males, females, and adolescents modify their voice. Conclusively, clinical analysis and therapies are becoming more understanding and accepting of the transgender community.

More knowledge about the LGBTQ culture will help speech-language pathologists to tailor voice therapy to meet their clients' needs. For example, a client who is gender nonconforming may want to alter their voice in a way that sounds neither similar to a cisgender female nor a cisgender male. "[M]embers of the LGBTQ community may be hesitant to disclose their membership in the community, even though they think it is important" (Kelly & Robinson, 2011). It is not enough for a speech-language pathologist to simply feel comfortable with working with transgender individuals. They must also understand how to appropriately adjust their therapeutic techniques to fit every one of their clients' wants and needs. In order to advance the understanding of the LGBTQ culture, there must be more open and improved educational opportunities for all future clinicians. These opportunities should go more in depth on gender diversity as well as how to specifically work with LGBTQ clients. Clinicians who have had successful experiences while working with members of the LGBTQ community need to guide future clinicians on how to correctly consider carrying out therapeutic techniques for transgender and nonbinary individuals.

Reasons for Treatment

Individuals who choose to go through with voice therapy, specifically voice feminization or masculinization, are usually transitioning their gender from male-to-female or from female-to-

male. Most clients go into voice modification sessions expecting that either raising or lowering their vocal pitch alone would be enough to change how their gender is perceived by society. However, this is not the case (Adler, Hirsch, & Mordaunt, 2012). Pitch is not the only factor that goes into voice masculinization or feminization. An individual who wishes to go through voice therapy to this degree may feel that their voice does not match their perceived gender. They may even describe themselves as "voice disordered" (Adler, Hirsch, & Mordaunt, 2012). It is important to consider, however, that an individual seeking vocal modification therapy does not usually have a voice disorder but rather, a voice difference. Jardim, Barreto, and Assunção describe that a voice disorder is the result of "an underlying alteration in the structure or in the work of the vocal trait..." (Jardim, Barreto, & Assunção, 2007). Differences in speech, on the other hand, are aspects of voice that may differ from person to person. Examples may include production in vowels between males and females or speaking rate.

In this case, the speech-language pathologist may act as a counselor and will often inform the transgender client that their voice is not disordered and that their voice can be altered for them to feel more comfortable and perceive themselves in a more gender-fitting way. Voice feminization or masculinization is the therapy often used for the client's voice to match their gender. (Adler, Hirsch, & Mordaunt, 2012). The way in which an individual perceives themselves can deeply impact their emotional well-being (Bultynck et. al, 2017). For example, an individual who feels like their voice does not match their gender identity may develop anxiety or avoidant behaviors. Voice therapy may help the client to feel more socially accepted and may also help them to feel like their perceived gender identity.

An individual who is transgender displays feelings of discomfort when it comes to their assigned gender at birth (Bultynck, Pas, Defreyne, Heiher,

& T'Sjoen, 2017). For most transgender voice clients, the main goal is to be perceived as their preferred gender by society. This is known as "passing" (Oates & Dacakis 2015). A transgender client may wish to alter their vocal intonation in order to either sound more feminine or masculine. In some cases, vocal therapy is used either with or following hormone therapy, especially in the case when said hormone therapy fails to change voice pitch (Quinn & Swain, 2018).

Most commonly, voice therapy is used in trans women who have already gone through puberty as a male. In this case, the use of estrogen may not be able to reverse the effects of laryngeal growth (Quinn & Swain, 2018). Additionally, transgender individuals tend to suffer from more mental illness than any other group in the LGBTQ community (Quinn & Swain, 2018). Other issues may arise such as "social stigmatization, rejection, discrimination, harassment, violence, and barriers to accessing health services [which may] contribute to elevated rates of unemployment, homelessness, high-risk sexual behavior, substance abuse, and suicide..." (Quinn & Swain, 2018). These behaviors may be exceptionally common in youth. While the goal of voice therapy should be for the client to perceive their voice to fit their gender, it may also help with passing in the public eye. As a result, transgender individuals may experience less shame from society, less bigotry, and less chance of being assaulted.

Additionally, there is a strong relationship between vocal dissatisfaction and reduced quality of life (Dacakis, 2008). Both trans males and trans females state that they are afraid that incongruent voice and gender may result in conflicts with other people, unemployment or limited employment opportunities, and violence (Davies & Goldberg, 2006). Transgender clients often report that the biggest obstruction to passing is their own voice (Davies & Goldberg, 2006). Individuals who are transitioning, specifically from male-to-female, may also

seek voice therapy in order to increase their vocal health. For example, they may wish to be more educated on aspects such as breath support and relaxing the vocal tract. Placing too much stress on the vocal tract can cause irreversible damage to the vocal cords and may prevent the client from reaching many of their vocal and communicative goals.

What is Voice Therapy for the Male-to-Female Client?

Vocal Folds

Before transitioning, a male-to-female client typically has a vocal fold length of 1.6 centimeters long. These vocal folds vibrate at an average of 120 times per second (Sloggy, 2020). The vocal folds of a male-to-female client will retain their size and mass even after they transition. The length and the mass of the vocal folds directly affects pitch.

Voice production.

Pitch. Pitch is often the main concern that the male-to-female client has when coming in for voice therapy. Raising the pitch alone may not allow the client to be perceived as more feminine; however a higher voice does tend to sound more feminine when compared to the original pitch (Dacakis, 2000). The goal is for the client to reach a pitch between 150-185 Hz in order to sound androgenic or feminine (Adler, Hirsch, & Pickering, 2018). It is important to keep in mind that fundamental frequency should be raised gradually so that it is done in a safe manner. If the client were to habitually use a pitch that is too high or low, it could result in a voice disorder. This can be done over multiple sessions. The more sessions the client can have, the more time they will have to elevate their fundamental frequency safely. It should be noted that raising the pitch does not necessarily mean that the client will be satisfied with their voice (Sloggy, 2020). Changing the fundamental frequency may also help to change other vocal characteristics such as the breathiness of the voice, the amount of strain placed on the vocal

folds, raising the intonation, and lowering volume. A male-to-female client has a better chance of being perceived as a female if both pitch and resonance are altered (Sloggy, 2020).

Adler, Hirsch, and Pickering (2018) describe a ten-step program in which the male-to-female client can accurately and safely elevate their pitch. Because the client may be taught later to use more nasality when speaking to attain a more feminine resonance , the first few steps in this program involve the client using /m/ and /n/ sounds, words, and phrases. From here, the client may be asked to talk through a straw in order to encourage forward lip use and create that desired higher pitch. The last steps of this process involve the client practicing various lengths of monologues in their new pitch (from 10 seconds to 5 minutes) (Adler, Hirsch, & Pickering, 2018). It is much more difficult for a male-to-female client to elevate their pitch than it is for a female-to-male client to decrease their pitch. This is due to the larger larynx and vocal folds. Once the larynx has fully grown, one cannot "shrink" their larynx, however the client may be able to get surgeries or receive hormone therapy in an effort to change pitch.

Resonance. Resonance refers to "the acoustic characteristics of speech, which are impacted by the changing shape of the vocal tract" (Adler, Hirsch, & Pickering, 2018). It is what makes each individual's voice unique and distinguishable. The aim for vocal therapy is to find congruence with the resonance and the pitch of the client so that they can feel this congruence between their voice and their gender identity. Changing the resonance of the voice means that how the voice is produced must also be changed (Sloggy, 2020). For the male-to-female client, traditionally this has meant that articulation should be more focused in the head and lips. Doing this will subsequently allow the fundamental frequency to also elevate. Teaching the client to use more of a forward/head resonance means that the client can potentially reach a pitch higher than

185 Hz. This head resonance may also prevent the client from having a more “heavy” and masculine voice and prevents the client from placing unnecessary strain on their vocal folds.

Intonation. Intonation is the voice’s natural melodic pattern when speaking. It is determined by where stress is placed in syllables, words, and phrases. This stress is what is able to convey message and emotion (Sloggy, 2020; Adler, Hirsch, & Mordaunt, 2012). The goal for a male-to-female client is to learn how to utilize a quicker and more upwards pattern of intonation. To put this into visualization, one may imagine the mechanisms of asking a question. The closer one gets to the end of a question, the higher their intonation becomes.

Articulation. Feminine articulation traditionally has been defined by a more clear cut, and faster rate of speech without excess strain (Sloggy, 2020). A male-to-female client may learn to enunciate most sounds when speaking so that their speech is easier to understand and they have time to place appropriate intonation patterns into their dialogue. They may also be taught to lengthen their speech, especially when using vowels. The speech-language pathologist may have the client practice this by repeating words and taking off the first phoneme. For example, “Car” and “Are”.

Loudness. When a male-to-female client goes into voice therapy, they are taught that in order to sound more feminine, they must first reduce the volume of their voice and increase the pitch of their voice. One mistake that these clients make is that they may present with a voice that is too quiet as a way to make their voice appear higher (Sloggy, 2020). By the end of their therapeutic sessions, the male-to-female client should be able to maintain a single pitch and volume level when they yell. The speech-language pathologist may do this by having the client yell certain words or phrases to see if their voice cracks or shifts in volume. To clarify, male-to-

female clients may need to have a lower volume level for conversation; however, they also need to be taught ways to be loud and retain the femininity in their voice.

Rate. A male-to-female client may come in to voice therapy with a faster rate of speaking when compared to what is more feminine. They will be taught to slow down their speaking rate. Slowing the rate at which they speak allows the client to control their breath and speaking accuracy (Sloggy, 2020). To help the client do so, the speech-language pathologist may ask the client to list out daily activities and slow down when listing them.

Language.

Syntax and Semantics. In order to sound more feminine, the male-to-female client may be taught to be more explanatory when speaking. For example, when answering a yes or no question, they may be taught to respond with "without a doubt!" instead of a simple "yes." They may be taught additional vocabulary and adjectives to describe certain ideas or events; for example, "I thought that movie was atrocious!". They may also be taught to use more words when speaking (Sloggy, 2020). For example, instead of saying, "I bought my ticket, ordered popcorn, and found my seat" they may be taught to say something more along the lines of, "I went to the front desk to buy my movie ticket, then I went to the concessions to order popcorn with extra butter, finally I was able to find a seat in the theatre." The client may also learn that in order to appear more feminine, they may need to ask follow-up questions after a statement. These are known as tag questions (Sloggy, 2020). An example of a tag question may be "The weather was nice, didn't you think so?"

Non-Speech Vocalizations and Pragmatic Language. Non-speech vocalizations include noises that are made using the voice but are not used in speech. Examples of this would be coughing, sneezing, or laughing. There is still a significant lack of research in non-speech

vocalizations of transgender individuals (Sloggy, 2020). The goal for the speech-language pathologist is to ensure that the client's non-speech vocalizations are congruent with the client's voice and communication skills.

Pragmatics also plays a role in differentiating gender. The male-to-female client may learn that they need to use more head movement when communicating, as this will allow them to appear more feminine. These head movements should imitate those of the individual that the client is conversing with. The client may also learn to use facial expressions often, especially with their eyes (Adler, Hirsch, & Mordaunt, 2012). The limbs also play a role in pragmatics. Women tend to move their arms while speaking or telling a story. In this case, they often move their arms from their elbows instead of their shoulders, giving their limbs a more "flimsy" and delicate appearance. The client may also be taught to use their fingers often when making gestures, as this adds more personality to the conversation. Any gestures or movements that the client makes while communicating need to be energetic in order for them to appear more feminine. When walking, the client may be taught to have a smaller stride. Women also tend to groom themselves while in public (ex: fixing hair, putting on lipstick, straightening clothes), so the client may also learn to do so while in public settings. When greeting someone, it is not often that the woman initiates the handshake, but when she does shake hands, she will typically do so using her wrist and her elbow. The purpose of this, once again, may be to appear more delicate and friendly (Adler, Hirsch, & Mordaunt, 2012).

Summary of Therapy for the Male-to-Female Client.

Overall it is extremely difficult and tedious for the male-to-female client to alter their voice. This is especially true if the individual chooses to transition and alter their voice after they have already gone through puberty. By this stage, their larynx is already much larger than

that of a cisgender woman; therefore, it is difficult to elevate the pitch safely. For this reason, the speech-language pathologist will need to rely on other aspects of speech and communication, especially resonance and pragmatics. Though the client's pitch may never be completely feminine, their resonance, loudness, gestures, and intonation may allow them to both pass as a female and feel more of an agreement between their voice and their gender identity.

What is Voice Therapy for the Female-to-Male Client?

Vocal Folds

The average female vocal folds are one centimeter long and vibrate at a rate of 200 times per second (Sloggy, 2020). Voice therapy for female-to-male clients relies on lowering the pitch of the client; however, this is by no means the only aspect that the client needs to alter in order to pass or appear more masculine. The client will also need to focus on resonance, articulation, rate, syntax, and semantics among other aspects.

Voice Production.

Pitch. Changing the pitch alone may not allow a client to feel satisfied with their voice. However, the speech-language pathologist should work on lowering the pitch of the female-to-male client, as lower pitch is often perceived as more masculine. In order to establish a more appropriate fundamental frequency range, the female-to-male client may use visualization of pitch, meaning that they will need to imagine a frequency that fits their own perception of their gender identity and visualizing themselves reaching that pitch. In most cases, this pitch is between 100 to 105 Hz (Adler, Hirsch, & Mordaunt, 2012). The client should begin by aiming for a pitch between this range, as it ensures that they can keep their vocal folds healthy by not putting too much strain on them. Altering pitch alone may have the client appear more masculine to others, but is often not enough to make the client feel comfortable with their gender identity.

The female-to-male client may also use harsh glottal attacks in an attempt to decrease the pitch of their voice. The speech-language pathologist should encourage the client to use other methods such as breathing and relaxation exercises in order to decrease pitch. Additionally, the client may choose to undergo hormone therapy in an attempt to lower the pitch of the voice.

Resonance. Modifying the resonance of the female-to-male client allows for them to be distinguished as male, especially when the client has already established a lower pitch. Males usually use chest resonance, which means that they have a "heavier" sounding voice. By teaching the female-to-male client to use chest resonance, they can avoid having a voice that is too smooth and airy. This will also improve the health of the vocal folds, as it discourages the client from trying to decrease their pitch to a range that may be damaging.

Intonation. In general, men tend to speak quicker than women and also use less words (Sloggy, 2020). They also use a decreasing intonation pattern when speaking, meaning that they start a phrase at a higher tone and then end the phrase in a lower one. Changing the intonation pattern may allow the client to appear as more masculine, but other aspects may also need to be altered in order for them to both pass as a male and feel more of an agreement between their voice and their gender identity (Adler, Hirsch, & Pickering, 2018). In 2014, Hancock et al. conducted a study that found individuals who spoke with a shorter mean length of utterances and downward intonation with a smaller semitone range were perceived as male. Hancock also observed that female-to-male clients who failed to pass as male tended to use more upward and less downward intonations than cisgender men or female-to-male individuals who passed as male.

Articulation. The female-to-male client may learn that in order to appear more masculine, their speech may need to be quicker and less ennunciated, but should still be

understandable by the listener. They may be taught to shorten the length of their vowels to create a faster rate of speaking. A female-to-male client may continue to avoid using fronted, lighter phonemes in an attempt to keep them from sounding feminine (Adler, Hirsch, & Pickering, 2018). As a rule of thumb, male articulation is less precise than female articulation (Oates & Dacakis, 1986).

Loudness. Masculine speakers tend to have a voice that carries more volume and has a flatter intonation. One common error that female-to-male clients make while going through voice therapy is that they become too quiet in an attempt to maintain a decreased pitch and intonation (Sloggy, 2020). The speech-language pathologist will need to ensure the client doesn't begin to use harsh glottal attacks to obtain loudness since this can be harmful to the vocal folds.

Rate. Overall, in order to sound masculine, a male-to-female client will need to learn how to speak at a speedy rate. However, because they will be speaking faster, they should be incredibly mindful that they continue to control their breath when speaking. This will allow them to be more easily understood and will also allow them to control their minimal intonation and lower pitch.

Language.

Syntax and Semantics. Men tend to be shorter and to the point when they speak. For example, when answering questions, they may simply choose to give a yes or no answer without offering elaboration. The female-to-male client will be taught to use less words when they speak. For example, when listing their daily activities, they may say, "I sat down, watched television, and fell asleep," while a feminine speaker may say something more along the lines of, "I sat down on the couch, watched the Bachelor, and got tired so I decided to take a

nap." (Sloggy, 2020). Unlike women, men tend to not use follow up questions. Instead of saying, "The movie was good, didn't you think so?" they may simply say, "The movie was good."

Non-Speech Vocalizations. Generally, men's gestures and bodily movements are less energetic and exaggerated than women. While speaking to someone, the male's body may not face the listener, though they may turn their head to share eye contact and facial expressions. When making gestures, the female-to-male client will learn to use broad hand gestures rather than using their fingers and wrists to further a point. Additionally, they will learn to move their arms from their shoulders instead of their elbows. When walking, the client may learn to have a more expansive stride. When seated, men tend to be less formal and have a more open position with their arms and legs (no crossing, relaxed) and tend to take up more space. Instead, they may choose to rest their hands on the arm of a chair, a table, or would even prefer to hold an object (Adler, Hirsch, & Mordaunt, 2012).

Summary of Therapy for the Female-to-Male Client.

Comprehensively, the female-to-male client has an easier time altering their voice and communication skills. They are born with a smaller larynx and vocal folds and may choose to go through surgery or hormone treatment to increase the size of these anatomical structures. As a result, they can more easily decrease their pitch and will not need to focus as heavily on other speech and communication aspects, though these aspects may be necessary if the client wishes to pass as a male.

A Comparison of Voice Therapy for Male-to-Female and Female-to-Male Clients

Interventions

Interventions for both the male-to-female and female-to-male client can be surgical and behavioral. If the client chooses that surgery is appropriate, their procedure would be performed by an otolaryngologist specializing in voice. If the client decides that behavioral voice therapy is needed, this would be administered by a speech-language pathologist.

Hormone therapy. Both male-to-female and female-to-male clients may choose to go through hormone replacement therapy to appear either more feminine or more masculine. The only difference is that the female-to-male client may take estrogen blocking hormones while the male-to-female client will take testosterone blocking hormones. In the female-to-male client, these hormones may typically lower the pitch one octave. They may also alter the resonance by lowering the larynx and altering the shape of the jaw (Sloggy, 2020). It should be noted that the use of hormones may have some disadvantages for the female-to-male client, as it can limit the pitch range and cause hoarseness and laryngeal irritation. Meanwhile, hormones for the male-to-female client may not be enough to alter the voice.

Surgery. Though rare, female-to-male clients have the option of undergoing a surgery that may decrease pitch known as Isshiki thyroplasty III. This is a surgery that alleviates tension on the vocal folds by shortening the thyroid cartilage (Sloggy, 2020). In 1983, Isshiki, Tairi, and Tanabe had nine clients who underwent this surgery. They found that these clients' pitches were decreased by an average of 100 Hz. The male-to-female client, on the other hand, may choose to undergo a pitch elevating surgery. In this procedure, the larynx is shortened and the vocal folds are stiffened in order to create higher frequencies (Geneid, Rihkanen, & Kinnari, 2015). Clients who have had these types of surgeries have reported variable amounts of achievement and generally go through rehabilitation following their surgery (Adler, Hirsch, & Mordaunt, 2012). a

Voice Training Goals.

For both female-to-male and male-to-female clients, the speech-language pathologist uses therapeutic techniques that focus on pitch, resonance, intonation, articulation, volume, rate of speech, language, nonverbal communication, and nonspeech sounds. Though pitch is often the main concern that both types of clients have, it is by no means the only factor that has a role in helping the client pass as their perceived gender.

The speech-language pathologist's role is to help the client (both female-to-male and male-to-female) to feel congruence between their voice and gender identity, feel that their new voice reflects their genuine self, create the ability to adapt their voice, become self-reliant and confident enough to use techniques outside of therapy, and to take proper care of their voice. For both male-to-female and female-to-male clients, pitch is typically the first step in altering the voice (Sloggy, 2020). Pitch also needs to be congruent with the speaker's resonance, regardless of gender. It should be noted that male-to-female clients have a more difficult time achieving their target pitch because of their already larger larynx and vocal folds.

In order to successfully change the resonance of the clients' voices, the speech-language pathologist may need to change the way in which they articulate (Sloggy, 2020). Altering articulation may allow the client to either increase or decrease their pitch with more ease. There are a myriad of advantages that come with changing resonance for both groups of clients. On top of helping the client to reach their ideal pitch, it also allows the client to avoid using a voice that is too hoarse or severe and allows the voice to stay healthy. Traditionally, male resonance is centered in the back of the throat or in the chest. Female resonance, on the other hand, is centered in the nasal cavity (Adler, Hirsch, & Pickering, 2018). In both cases, intonation is altered so that the client can adequately connect their speech with emotions. Both groups of clients may learn when it is appropriate to use upward and downward intonation

but will do so in varying degrees (dependent on gender identity and client's own preferences). Males generally have more of a downward pattern of intonation while females have more of an upwards pattern with more variance in their speech (Sloggy, 2020).

Volume and articulatory rate are other aspects that should be considered when planning on working with a female-to-male or male-to-female client. Traditionally, females are thought to have softer volume while males have louder volume. The speech-language pathologist may have both groups of clients slow down their speech (though female-to-male clients will speed up later). This is because slowing down the rate of speech may allow the client to control their breathing, maintain a constant pitch, be more understandable to the listener, and maintain an appropriate intonation pattern. This can be done by having the client list out daily activities and having them slow down anytime a comma or pause is used (Sloggy, 2020).

Language Training Goals.

For both male-to-female and female-to-male clients, language is generally less effective in helping the client pass than voice is (Sloggy, 2020). Language may also be different depending on culture and setting.

Comparisons in non-speech vocalizations. Non-speech vocalizations include aspects such as clearing one's throat, laughing, and crying. It is crucial for both groups of clients that their non-speech vocalizations are congruent with their voice and ways in which they communicate (Sloggy, 2020). The therapy targets for both male-to-female and female-to-male clients are vastly different. For example, a female-to-male client may need to cough at a lower pitch than what they may have been previously used to in order to appear more masculine.

Vocal Hygiene.

Altering an individual's voice may cause irreversible damage if done improperly or if the client does not participate in vocal hygiene. Male-to-female and female-to-male clients follow the same vocal hygiene tips. First, they should monitor how their voice sounds. If the voice is overly strained or breathy for over two weeks, the client may need to seek medical help (Sloggy, 2020). The clients should also monitor their water intake and should be mindful to stay hydrated enough. This would mean that they are consuming roughly ½ of their body weight in ounces of water. If the client is a current smoker, they should quit smoking as soon as possible. The chemicals found in cigarettes or other drugs that can be smoked may lead to vocal cord swelling as well as cancer in the lungs, throat and mouth when inhaled (Sloggy, 2020). Additionally, the clients should avoid activities such as screaming as much as possible, as this can cause damage to the vocal folds and create hoarseness. The clients should also refrain from using caffeine or alcohol as much as possible. The use of these two substances can make the vocal folds dry and give the speaker a raspy voice (Sloggy, 2020). If the speaker does not have anything blocking or interfering with their lungs and throat, they should avoid coughing, as this can also cause vocal fold damage and negatively affect the quality of the voice. It is important for the client to also refrain from eating spicy or irritating foods that may cause acid reflux. This is because stomach acid can erode the tissues surrounding the vocal folds and result in breathiness among other vocal issues (Sloggy, 2020). If the client's voice is raspy, they should avoid speaking and yelling as much as possible in order for their voice to properly recover. Failing to do so may result in vocal fold damage.

It is necessary for both the female-to-male and male-to-female client to warm up before engaging in therapy or therapeutic techniques. This is also advised before the client is about to speak for long periods of time, such as for a speech or a presentation. Activities to help warm up

the vocal folds may include lip trills, sirens, pitch glides, or tongue trills (Sloggy, 2020). Finally, both groups of clients need to know when to take a break. Giving one's voice a break is especially effective after the vocal folds have been excessively used or strained.

Social Biases and Stereotypes Based on Gender and Voice

With societal ideas of gender progressing comes the progress of vocal and communicative therapies for transgender clients. The speech-language pathologist should focus less on how they think the client should progress and more on how they can best help the transitioning client to feel more comfortable with their voice and gender identity. The client may also need to be made aware about how changing their voice may also carry negative effects because of society's gender roles and biases. There is an increasing amount of knowledge regarding transgender individuals by society. This is the result of society's more accepting viewpoints, celebrities who have come out as transgender, and politics surrounding transgender issues (Adler, Hirsch, & Pickering, 2018). Contrary to popular belief, not all transgender individuals seek to pass, and do not see themselves as being in the wrong body. Some of them do not conform to either a male or female side but may consider themselves somewhere in between or neither gender. Transgender individuals face bias and oppression daily.

Evidence-Based Practice

It is also important to review the concept of evidence-based practice and how it can support speech-language pathologists to avoid having gender stereotypes influence their practice. The three portions that make up evidence-based practice are clinical expertise, patient preference and viable evidence (ASHA, 2020). Out of these three aspects, patient preference is the one that is most easily incorporated in voice therapy for transgender individuals. There is still a lack of both clinical expertise and reliable evidence in terms of adequate and gender

appropriate therapy for transgender voice clients (Adler, Hirsch, & Mordaunt, 2012). For this reason, the speech-language pathologists may feel the need to rely on gender stereotypes. They may then base their client's therapeutic goals on these gender stereotypes.

Speech-language pathologists must create appropriate clinical questions as well as both conduct and use research in order to properly help their clients, especially when their client may be a transitioning individual. According to the American-Speech-Language-Hearing Association, evidence-based practice can be defined as, "the integration of clinical expertise/expert opinion; external scientific evidence; and client/patient/caregiver perspectives" (ASHA, 2020). Clinical expertise/expert opinion refers to "high quality research evidence [that] is integrated with practitioner expertise and client preferences and values into the process of making clinical decisions" (ASHA, 2020). Looking at client, patient, and/or caregiver perspectives allows the clinician to move forward with much-needed information and abilities beyond a large array of communication difficulties. For example, the client may wish to sound more feminine, but may want to do so without altering pitch. In this case, the speech-language pathologist may need to look at other therapeutic techniques such as altering the client's resonance and pragmatics to make them appear more feminine without having a higher voice.

Perhaps the main challenge for both clinicians and transgender clients is that there are not yet enough evidence-based practice guidelines for voice training for these clients. As far as clinical expertise goes, clinicians have been analyzing their role with male-to-female clients since the late 1970's. (Adler, Hirsch, & Pickering, 2018). On the other hand, clinicians still do not have this knowledge for female-to-male clients as of 2020. There is also a major lack of case reports for female-to-male voice clients, while male-to-female clients have had EVP-guided case reports throughout the 1980's, 90's, 2000's, up into the present day (2020). If speech-language

pathologists want to adequately apply themselves to a female-to-male voice client, they must first cultivate "relevant clinical questions and then search for and obtain access to evidence that supports their practice" (Adler, Hirsch, & Pickering, 2018). In order to combat this issue, clinicians can conduct more diverse studies (i.e. randomized and quasi-experimental) as well as place more limits or restrictions on experimental bias. Clinicians may also choose to conduct a study on one specific vocal intervention rather than just raising fundamental frequency or broadly focusing on vocal training in general.

Following the last point, it may be more beneficial for both clinicians and clients if there was more evidence on one specific intervention, for example, one intervention that proves to be effective for loudness; one intervention that proves to be effective for vocal quality; or one intervention that proves to be effective for tone. Furthermore, the follow-up periods for most of these studies appeared to be relatively soon following the therapy sessions. Perhaps further time between the last session of therapy to the follow-up study should be used in newer studies. Another aspect that can be improved upon based on these studies is for the clinician to mention how intense the therapy sessions are. For example, how long is each intervention incorporated? How many breaks are incorporated? How does the client progress from each intervention period? Carding (2000) brought up the idea that randomized clinical studies or trials may be the most effective way to better evidence-based practice for voice modification therapy for male-to-female individuals.

In general, there is not a history of broad, external scientific evidence to support voice and communication therapy for transgender individuals. Additionally, many speech-language pathologists do not have clinical expertise with the transgender population. Wester (2010) mentions that most clinicians are not experienced with working with individuals who are

transgender or part of the LGBTQ community. One thing that many clinicians are exposed to; however, is the gender binary, which will be discussed later.

Societal Beliefs

The fact that societal beliefs may also reinforce negative stereotypes is also necessary to explore. It is no secret that in many societies, there may be significant gender inequality. Huimen, Zhang, Lingfei, and Cheng-Jun (2009) describe a concept known as the "Cinderella complex" which is the belief that many cultures have that women need men in order to lead a content and purposeful life. This is portrayed in art, pop culture, and history. The Cinderella complex occurs in nearly every culture and has continued to do so throughout history, further asserting that harmful gender stereotypes are rooted deep within our societal core (Huimen, Zhang, Lingfei, and Cheng-Jun, 2009). Even in television shows, movies, and novels, it is likely that the male character focuses his energy on participating in risky and heroic tasks while the female character focuses her energy on finding heterosexual love. Society tends to support these gender stereotypes, as these types of events and characters are seen often in our media.

Altogether, this, along with many other aspects, shows that our society sees being a woman as a disadvantage. Women are seen as the weaker sex since they are displayed in such a way that they need to rely on men for money, safety, and happiness. Taking all of this into consideration, it is reasonable to argue that even if a speech-language pathologist does succeed in helping a male-to-female client reach their feminine voice goals (such as lowering their vocal volume), they may be doing them a disservice. Traditional male-to-female voice and communication targets, such as a softer volume and rising intonation patterns may confirm stereotypes that women are weak (Wester, 2010; Adler, Hirsch, & Mordaunt, 2012). Therefore,

a male-to-female client may pass as female and experience little to no problems, but when the speech-language pathologist creates goals that support female weakness, the client may be subject to discrimination.

An example of how stereotypical gender biases may negatively affect the client's therapeutic course would be if a male-to-female client comes into voice therapy stating that they want a more feminine voice. The speech-language pathologist may think that this client would desire a more varied intonation pattern, reduced vocal volume, and more use of gestures, as these aspects may sound feminine according to the general society. The speech-language pathologist may use these societal ideas of what it means to sound feminine to base their client's goals on. These societal beliefs, however, may not align with the client's wants. Thus, the client may feel that their voice does not match their gender identity.

The speech-language pathologist can complicate the course of the client by discounting the client's wishes and making goals based on the therapist's own stereotypes. This can cause the client to be dissatisfied with the outcomes of therapy. A speech-language pathologist may also make the mistake of focusing too much on just changing the client's voice. While it is true that a transgender client may feel distress because their voice does not match their gender identity, most of the time, this distress is actually the result of the culture surrounding the client (Hancock & Haskin, 2015). A survey of transgender voice clients found that 43% of clients found that they were treated with a heteronormative bias (Kelly & Robinson, 2011). Additionally, the WPATH mentions that voice therapy should focus on the client becoming comfortable with how they express their gender rather than trying to pass or conform to societal biases that are accepted by the mass majority of the population which may include many speech-language pathologists. If the speech-language pathologist fails to do this, the client may find themselves avoiding

multiple daily activities out of fear of being discriminated against or judged. It is best that the speech-language pathologist bears in mind that stereotypes are not fact, but biased opinions. Voice therapy should not solely be based on the client's ability to pass in society, as this creates a mentality that passing is the only way for the client to feel content. Therefore, if the client fails to pass, their health and safety could be compromised.

The more a speech-language pathologist is exposed to sexism and gender biases, the more likely they may be to accept these beliefs. In general, society sees masculine figures as being more able than feminine figures. On the other hand, feminine figures are seen as more friendly and kind when compared to masculine figures (Ramos et. al, 2016). Traditional targets that a speech-language pathologist may make for their clients may be supporting society's biases. An example of this would be having a male-to-female client learn how to have an increased pitch, upward intonation, and increased amount of gestures when speaking. Though these may be appropriate goals in some clients, other clients may wish to only alter one of these aspects in order to still have some masculinity.

Though both male-to-female and female-to-male clients may experience harassment and violence if they do not pass by society, male-to-female clients are more likely to experience strict, sexist, and confining gender roles if they do pass by society simply because of the fact that cisgender females experience these hardships (Wester, et. al, 2010). Additionally, transgender males may experience their own hardships because of gender stereotypes. First, masculine figures are perceived as being more profitable, strong, ambitious, and aggressive (Wester, et. al, 2010). In order to reach the achievements and success that a cisgender male may reach, the female-to-male client may find it necessary to restrict their emotions. They may do this by avoiding expressing any emotions verbally (either by stating how they feel or using

intonation to portray feelings). Having a lack of vocal intonation may convey a lack of emotions.

All of these roles can create many difficulties for the speech-language pathologist. First, the SLP may need to find a balance between the client's own desires and how these may affect how they are treated in society. Therefore, the speech-language pathologist may need to focus on creating a voice that is congruent with the client's sense of self as well as educate the client on society's potential reactions to the client's voice and gender identity (Wester et. al, 2010). The speech-language pathologist should support and help the client to find a voice that is congruent with their gender identity, but they should also have a discussion with the client about the negative responses by society and should prepare them for these potential responses.

Additionally, transgender clients may have difficulties with relearning how to socialize with others as their new gender. They may feel the need to give in to societal gender stereotypes and communicative behaviors to pass as either male or female. What makes this situation even more challenging is that many clients come in seeing themselves as neither male nor female, meaning they may feel one way and appear another way (Wester et. al 2010). In these cases, society may see this individual as either male or female and will discriminate against them for deviating against their appearance instead of understanding that perhaps there is a conflict between the individual's outer appearance and gender identity. Male-to-female clients may be unaware of the extent to which society favors men and masculinity. As a result, females are often prone to more discrimination such as rape, assault, and violence. For this reason, the male-to-female client may also need to learn how to protect themselves once they are perceived as female by society.

Both the client and the speech-language pathologist may need to collaborate to determine when and where the client would like to use their new voice and communication characteristics. For example, the client may want to speak and act as their self-perceived gender but only when they know they are in an environment where they are safe to do so. The speech-language pathologist needs to rely on the client's desires rather than their own beliefs of what is feminine or masculine.

For some clients, living as their self-perceived gender without altering their voice may be enough for them to feel content. Other clients, however, may want to change their voice to match their gender identity. Perhaps the most important role that the speech-language pathologist can have at this point would be to ensure that the client is confident with their voice, is aware of how these changes may affect how they are treated, and then works with the client to achieve their vocal and communicative goals.

Hardships associated with gender stereotyping.

While society has evolved to become more accepting of transgender individuals, there are still some people who strongly dismiss this notion that gender and sex are different from each other. Additionally, individuals who consider themselves transgender may have a difficult time making friends as well as forming romantic relationships (Adler, Hirsch, & Pickering, 2018). This is due to the idea that, while many consider themselves accepting, they still may unknowingly have gender biases or place harmful gender stereotypes on an individual who does not confirm to specific gender roles and stereotypes.

It is crucial to point out that for some transgender clients, there may not be healthcare providers who are willing to work with their specific needs regarding their own perceived gender identity. There is also this false notion in the healthcare world that transgendered people are

"disordered or diseased" (Adler, Hirsch, & Pickering, 2018). A transgender individual may need medical assistance in order to transition in a way that matches their own perception of their gender identity. They may do so without having many mental health issues associated with their gender identity. However, in order to receive this medical assistance, the transgender individuals may need to be diagnosed with gender dysphoria even if they are showing no signs of this. Adler, Hirsch, and Pickering state, "when navigating diagnostic labeling, it is necessary to also recognize the societal and political forces impacting sexual and gender minorities and the creation of consistently high levels of chronic stress, on both macro and micro levels" (Adler, Hirsch, and Pickering, 2018).

Some transgender individuals do not experience gender dysphoria but express excitement when it comes to the process of transitioning. Therefore, "the diagnostic category of Gender Dysphoria presents a challenge to people wishing to engage in some degree of medical transitioning but not having a history of significant conflict with their present body" (Adler, Hirsch and Pickering, 2018). One effect of such gatekeeping in the medical world is that some transgender clients are reluctant to seek help (either physically or mentally) because they may be afraid of being rejected or made to feel as if they were disordered. Perhaps the best approach to help such clients is by using affirmative therapy, "a non-pathologizing approach to clinical practice that accepts and validates all experiences of gender" (Austin and Craig, 2015). It is the clinician's responsibility to talk over the client's autonomy and should reassure the transgender client that they are the one who should decide aspects of their gender, not the clinician or anyone else in society.

Additionally, the client should be made to feel as if they are in a safe space. While transitioning, a client may feel as though they cannot openly discuss and investigate their gender

identity. According to the American Psychological Association, health care providers should, "recognize how stigma, prejudice, discrimination, and violence affect the health and well-being of transgender and gender nonconforming people" (APA, 2015). If the speech-language pathologist pushes their agenda on the client based on gender stereotypes, then the client may feel alienated.

Engaging with and advocating for the transgender individual.

The job of the clinician is to allow the client to explore their own gender or identity rather than imposing (either intentionally or unintentionally) their own gender biases onto the client. The clinician should allow the client to take charge of their sessions and should take careful steps such as asking open-ended questions and speaking with the client while using their preferred pronoun(s) (Adler, Hirsch, & Pickering, 2018). Advocacy for a transitioning individual should focus "not on transforming transgendered clients but rather transforming the cultural context in which they live" (Carrol, Gilroy, & Ryan, 2002). In a world where being cisgender is culturally dominant, the role of the speech-language pathologist should be to advocate for all of their client base, even those that are in the minority.

Conclusion

The goal of this research was to determine the differences and similarities between the therapeutic techniques used with male-to-female versus female-to-male transgender voice clients as a result of their existing and potentially changing anatomy and physiology. It also determined the potential impacts of gender stereotyping on therapeutic techniques and a client's therapeutic course. These aspects are crucial, as lack of specification in technique or bringing one's own biases into therapeutic sessions may keep the client from finding success or progressing in their voice therapy and communication programs.

There are a variety of similarities in the therapeutic techniques for male-to-female and female-to-male voice clients, but the differences must be considered in order to cater to each individual client's needs. For example, the client's habitual fundamental frequency must be considered in order to find a voice that is both suitable for their gender and safe for them to use. Each group of clients may also have different perspectives and ideas for what their voice should sound like. A male-to-female client may come in asking to simply increase their pitch, or they may completely disregard pitch and wish for a more feminine resonance. The same goes for a female-to-male client. Male-to-female individuals typically strive for a higher voice; therefore, the speech-language pathologist must find ways to safely and effectively raise the pitch of the individual over time. In contrast, female-to-male clients may want a decreased pitch. In this case, the speech-language pathologist must look at techniques that can safely and effectively work to lower the client's fundamental frequency. Resonance also plays a big factor in the therapeutic techniques between these two groups of transgender clients. Male-to-female clients are taught to use head resonance, meaning that they use the articulators used around the face and head such as the nasal cavity. Female-to-male clients are taught to use chest resonance, meaning that they use their diaphragm and breath support to articulate sound.

Contrary to popular belief, voice and communication therapy for transgender individuals involves much more than simply elevating or decreasing pitch. There are a multitude of other factors that are used depending on the client's preferences and which way they may lean on the gender spectrum. Focusing on pitch alone may solve only one barrier out of many that a transgender client may have; therefore, it is important to explore all options and aspects that have to do with voice and communication. For example, if a male-to-female client aspires to pass as a traditional female, they may not be able to achieve their desired pitch in a healthy way. For this

reason, goals may focus on pragmatic skills, resonance, volume, rate, and intonation among other factors. It should be noted that even having separate interventions supports a view of the gender binary rather than an individualized approach.

It is crucial that both the SLP and society in whole become more open to the idea that gender is a spectrum rather than a two-sided ideology. Forcing gender roles or beliefs onto a client who identifies as neither female nor male may cause both emotional and physical damage to the client and create tension in their everyday relationships.

Gender stereotypes and biases held by the client, clinician, and society can prevent the client from getting much-needed help. Transgender individuals often face discrimination and become fearful that trying to find a congruence between their body and perceived gender may cause them further damage. The speech-language pathologist should, therefore, create a space in which the transgender client can explore their own gender identity. Additionally, the SLP should avoid forcing their own ideas and gender roles on the client, even if it is unintentional. In general, society may also need to adjust the black and white picture that they paint of gender, as these can be harmful to transgender individuals as well as cisgender individuals.

The transitioning client may feel distressed because they have a desire to change themselves without deviating from societal norms of what is considered masculine and feminine. This is not to say that speech-language pathologists should not help their client to communicate in a way that matches their gender identity. Instead, the speech-language pathologist should help the client find a voice that they will be satisfied with while educating the client on potential hardships they may face as a result of changing their voice and communicative strategies. After all, a treatment plan that subscribes to gender roles may give the appearance of a passing male-to-female client as weak. Similarly, if a female-to-male's voice

doesn't sound masculine enough, they may be alienated or discriminated against because their voice does not match their appearance.

Overall, practicing clinicians should pay close attention to the differences in the therapeutic techniques for male-to-female versus female-to-male voice and communication clients. Society should also work to become more open-minded and accepting to the idea that everybody may have different viewpoints on gender ideologies. Additionally, the speech-language pathologist should avoid setting goals based on their own ideologies regarding gender. Doing both will ensure that the client is able to receive the help that they need and be able to make progress in their therapeutic sessions.

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