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Outcome Measures and Demographic Representation of Voice Studies of Transgender People: A Scoping Review

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OUTCOME MEASURES AND DEMOGRAPHIC REPRESENTATION OF VOICE STUDIES OF TRANSGENDER PEOPLE: A SCOPING REVIEW

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INTRODUCTION

A transgender individual is defined as someone who was assigned male or female at birth but identifies as a different gender (GLAAD, n.d.). There are over one million individuals in the United States that identify as transgender (Meerwijk & Sevelius, 2017). The authors of this study also found that most transgender individuals are college students, followed by adults of the general public.

Over the last few years, the transgender population in the United States has been increasing (Flores, A. R., Herman, J. L., Gates, G. J., & Brown , T. N. T. 2016). This increase has resulted in additional services needed to effectively help these individuals transition into their desired gender identity, specifically in healthcare. A majority of medical schools do not extensively cover issues related to LGBTQ+ healthcare (Kates, J., Ranii U., Adara B., Salganicoff, A., & Dawson, L., 2018).

One gender-affirming service that is noteworthy in the transition of this population are voice and communication services. This service is provided by a Speech-Language Pathologist (SLP). A majority of transgender individuals want voice services provided by a Speech-Language Pathologist (Kelly & Robinson, 2011). This service can be different depending on the needs and wants of the client as well as if the client is transfemale or transmale (Antoni, 2015).

Because of different life experiences, the goals of transmen and transwomen differ as well as the goals of various subgroups within the transgender population. Transwomen tend to focus on goals related to pitch, resonance, intonation and intensity (Schneider & Courey, 2016). Other goals can be related to specifically transwomen, are volume, body language, pragmatics, etc. (Hancock & Garabedian, 2013). Although transmen tend to have similar goals such as pitch and resonance, there are fewer transmen that come to services provided by an SLP. One reason for this could be the fact that transmen will already have a lower pitch due to hormone therapy (Cosyns, M., Van Borsel, J., Wierckx, K., Dedecker, D., Van de Peer, F., Daelman, T., Laenen, S., & T'Sjoen, G., 2014). These goals can even differ between other sub-groups on the gender spectrum but for the purposes of this study, we will be focusing on gender-

affirming services provided to transwomen and transmen, thus we will not be including gender non-conforming individuals.

As previously mentioned, a majority of medical schools do not cover LGBTQ+ healthcare, but SLPs do not go to medical school, but they are required to have at least a Master's degree in Speech-Language Pathology as well as other steps to obtaining licensure (Council for Clinical Certification in Audiology and Speech-Language Pathology, 2020). However, this service requires an SLP who is competent in knowledge of this population, and the services that the clinician can provide. There are many specifications in order to perform this service that many SLPs lack.

One is knowledge of the service itself and the LGBTQ+ population. Most SLPs are not comfortable with providing this service due to this lack of awareness of the population as well as the fact that they weren't taught extensively about the topic in graduate school (Sawyer, Perry, Dobbins-Scaramelli, 2014). Hancock & Hankins (2015) found similar findings but also found that over 90% of SLPs view the LGBTQ+ population in a positive manner. Cultural competency is necessary for a SLP to perform any service, therapy, or intervention. The American Speech-Language-Hearing Association (ASHA) defines cultural competence as "understanding and appropriately responding to the unique combination of cultural variables and the full range of dimensions of diversity that the professional and client/patient/family bring to interactions" (ASHA, 2005). This can include knowledge of concepts related to gender expression and identity.

Gender-affirming voice services are within the scope of practice for SLPs, however, there are ethics involved in providing a service to any population according to ASHA's Code of Ethics. Principle II, Rule A, (2016) states: "Individuals who hold the Certificate of Clinical Competence shall engage in only those aspects of the professions that are within the scope of their professional practice and competence, considering their certification status, education, training, and experience". This rule implies that an SLP must be clinically competent in providing services to the transgender population. However, Principle I, Rule C, (2016) states: "Individuals shall not discriminate in the delivery of professional

services or in the conduct of research and scholarly activities on the basis of race, ethnicity, sex, gender identity/gender expression, sexual orientation, age, religion, national origin, disability, culture, language, or dialect". This implies that SLPs cannot discriminate against specific identities, including the LGBTQ+ population. The only concern with these two rules is that since a majority of SLPs were not taught about gender-affirming voice services in graduate school and assumingly did not receive any clinical placements related to the service, it is difficult for an SLP to treat this population, thus this could be one reason why there are not enough SLPs providing services to this population. One reason that cultural competence is crucial to the LGBTQ+ population is because that most healthcare providers are not competent in this population to begin with. Gruberg, Halpin & Mahowald (2020) found that 33% of transgender individuals had to teach their healthcare provider about transgender people.

An additional aspect of providing speech pathology services to any population is evidence-based practice (EBP). According to the ASHA (n.d.), EBP is the combination of the following three components: "Clinical expertise/expert opinion, evidence (external and internal) and client/patient/caregiver perspectives". Clinical expertise/expert opinion is the knowledge an SLP has through training and other experiences. Internal and external evidence is information from scientific journals and from data collected on the client. Client perspectives is input from the client (or caregiver) on what services should be prioritized and how it should be structured. This is another concern that SLPs face when gathering all of the components of EBP for transgender individuals.

The overarching issue for SLPs who want or need to provide services to the LGBTQ+ population involves the combination of both cultural competence and EBP. It is essentially a huge dilemma if SLPs only have one (i.e., cultural competence or EBP) but not the other. SLPs can't provide culturally competent services and engage in EBP if there is no research related to their caseload. And SLPs can't provide EBP to transgender people if there isn't good research to base their services on.

Scoping reviews are an effective method of analyzing a research topic of specific interest (Arksey et al. 2002). They can aid researchers and clinicians by providing what research already exists on a

particular topic (Levac et al. 2010). In the field of speech-language pathology, scoping reviews can be used to identify the background knowledge of researchers and clinicians. Scoping reviews contain significant benefits and limitations. Like most studies, they can be replicated, which is important because researchers should be able to come to the same results if the study was performed again. Unlike a literature review, the validity of a scoping review is higher because they take time to scope through the existing literature. Because it does take time to scope the literature, it can be time-consuming and tedious. There is a possibility of bias because eligible data on a topic could be overlooked (Sucharew & Macaluso, 2019). A scoping review is important because it pinpoints what populations, treatments, etc. need to be studied further. This can benefit the clinician, and the researcher. It allows the clinician to improve their knowledge on the topic, thus improving therapy for the client. It can tell researchers what areas need to be studied further and enhance the availability of a particular research topic.

The aims of this scoping review are: i. determine the outcome measures used in studies which investigate the efficacy of SLP-delivered, gender-affirming voice-based programs for transgender individuals and ii. provide data on the demographic characteristics of transgender individuals who serve as participants in these studies. In particular, we will provide data on the age and gender makeup of participants featured in the identified studies.

These questions are important because the results can illustrate where we need to make improvements for in regards to EBP and cultural competency. The first aim will tell us how many studies of gender-affirming voice-based services have focused on different aspects of EBP. Different outcome measures can tell us about each of the aspects of EBP. If one or all of the areas of EBP are underdeveloped, then researchers need to focus on that area(s) before SLPs will be able to provide culturally competent and client-centered services to transgender individuals. The second aim will tell researchers who are represented in the literature. Due to different life experiences of sub-groups of transgender people, programs designed to address the needs of one group may not be relevant for the

other. So, investigating the make-up of the participant pool will tell us who we need to focus on more if we want to have functional and relevant services available to transgender people.

METHODS

This scoping review methodology was based on the framework provided by Arksey and O'Malley (2005). The aims of this scoping review are as followed: 1. What outcome measures are used in studies of gender affirming programs delivered by SLPs to trans clients? 2a. How many trans men and women were included in studies are participants? 2b. What was the average age of participants in studies?

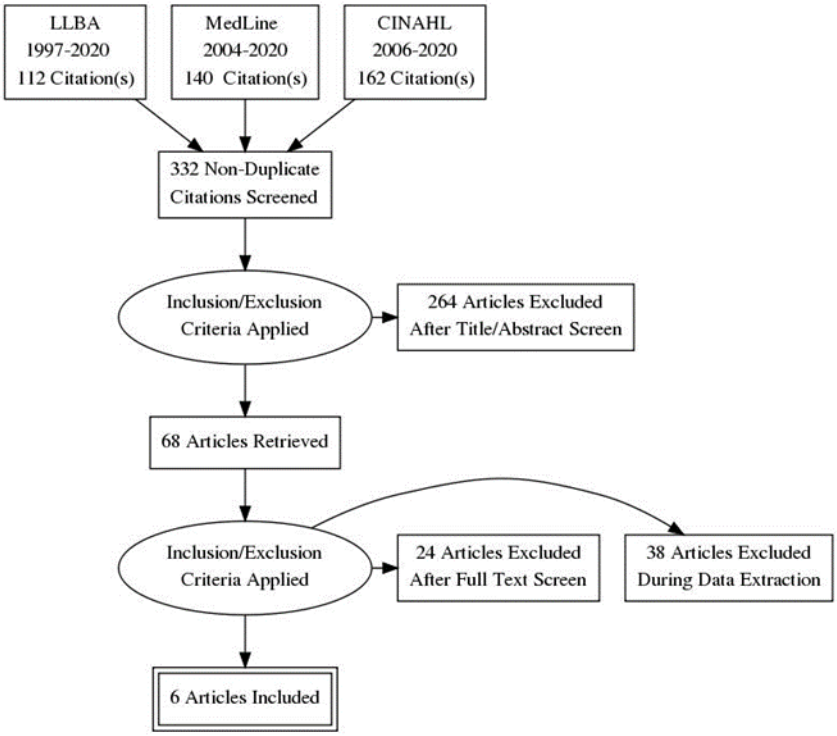
Next, we determined a criteria for identifying relevant research articles. Studies in speech-language pathology related to transgender individuals can be divided into two different types. One type is intervention focused. These studies focus on providing services to transgender individuals and determining the effect of the service. The other type is basic science studies, in which the researchers investigate relationships between different variables and didn't provide treatment. Both types of research were included in this study.

Studies had to:

- include transgender individuals as participants
- include information about the participants gender assigned at birth
- provide information about the ages of the participants
- include at least one research question related to voice production
- identify at least one outcome measure
- be in English
- be peer-reviewed

Using the criteria and the research questions, we then identified search terms that consisted of the following pair: "transgender" and "voice". The following three databases were used for collecting

research articles: LLBA, MedLine, and CINAHL. The results of the databases were uploaded to RefWorks and cross-checked for duplicates. In the next stage, we read the full texts of the articles and eliminated articles that did not fit the criteria. Lastly, we identified the outcome measures in the relevant articles. We extracted the data from these articles and conducted an analysis that was informed by our research questions.



RESULTS

Of 414 articles identified, only six articles matched the criteria for this study.

In four of these studies, fundamental frequency was used as the outcome measures while three of the studies listed listener perception as an outcome measure.

Other outcome measures include the following: questionnaires designed to understand a client's perception of their voice quality of life and their happiness with their voice, assessments like the CAPE-V, and self-rating scales.

Figure 1: PRISMA flow chart of how articles were included/excluded

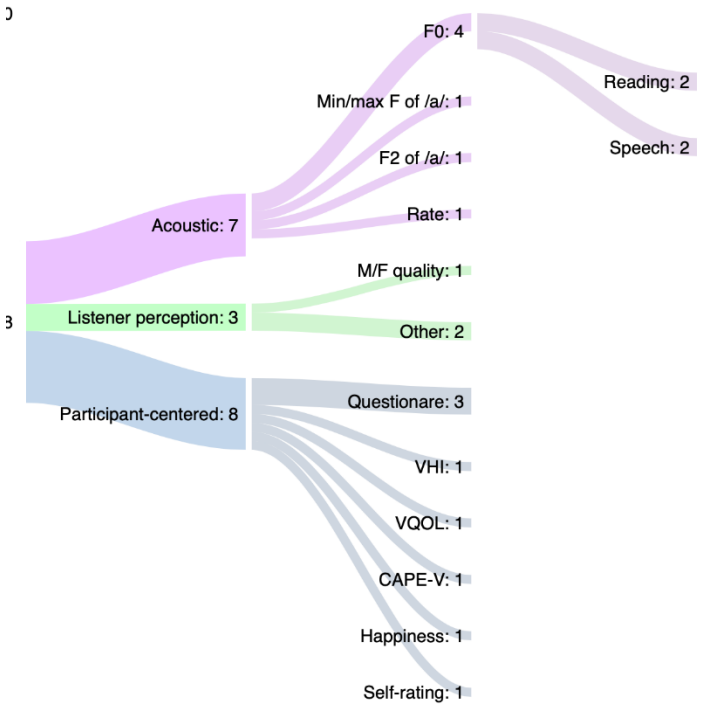


Figure 2: Sankey Diagram of different outcome measures

The participants ages ranged from 15 to 80 years old (average age: 33.65). In regards to gender, 123 transwomen and 0 transmen served as participants. In four of these studies, the participants were older women who had been assigned male at birth. The other two studies focused on younger transwomen who were both under the age of 18.

Study	Participants	Outcome Measures
Gelfer, M. P., & Van Dong, B. R. (2013).	3 MTF*, 32: 11 to 50:5 years old (age range 43:1 years old) 6 control speakers (3 male and 3 female)	listener perception, masculine and feminine rating scale
Hardy, T. L., Boliek, C. A., Wells, K., Dearden, C., Zalmanowitz, C., & Rieger, J. M. (2016).	25 IMtFGI*, mean age 36.05 years 30 listeners	f0 reading frequency, min and max frequency of the vowel /a/, f2 during the vowel /a/
Hancock, A. (2017).	113 total 81 MtF* 25 FtM* 7 other identity	questionnaire, voice handicap index (VHI), voice quality of life (vQOL)
Hancock, A., & Helenius, L. (2012).	1 MTF*, age 15 years and 3 months	questionnaire, CAPE-V, f0, rate (Rainbow Passage), listener perception
McNeill, E. J. M., Wilson, J. A., Clark, S., & Deakin, J. (2008).	12 MTF*, age range 32 to 65 years (mean 47.5) 15 SLPs 40 observers	fundamental frequency (f0), happiness with voice (visual analogue scales), questionnaire
Quinn, S., & Swain, N. (2018).	1 MTF*, age 17 years old	fundamental frequency when reading, listener ratings, self ratings

Table 1: Citation, ages of participants and outcome measures of studies used

*the terms mentioned above were used at the time of when these studies were published and are now outdated

DISCUSSION

Out of 414 results, only six studies matched the criteria. This illustrates that transgender individuals are not well represented in the research of Speech-Language Pathology. In fact, transgender individuals are not well represented in almost all areas of research related to healthcare (Reisner, Deutch, Bhasin, Bockting, Brown, Feldman, Garofalo, Kreukels, Radix, Safer, Tangpricha, T'Sjoen & Goodman, 2016).

There are significant implications of having transgender individuals underrepresented in Speech-Language Pathology. Clinicians face significant problems when providing services to this population because there isn't enough research available. Due to the lack of research of this population, transgender individuals may not want to seek out this service because there are few SLPs who know how to competently help them (Sawyer, Jean & Perry, Jamie & Dobbins-Scaramelli, Ashley, 2015). This could also be interpreted as indirect discrimination of the LGBTQ+ community seeing that there isn't enough SLPs to help the transgender population. Indirect discrimination is when there is a policy or rule in place that applies to everyone the same way that puts people of a particular population at a disadvantage (Indirect discrimination, 2020).

In this study, we found that participants ranged from 15 to 80 years old with the average age being 33.65. Two of the six studies focused on transgender individuals who are younger than 18 years

old. Although this may seem like a lot considering this makes up 33% of the studies found, when looking through the abstracts it was evident that, for the most part, transgender youth are missing from the literature. It is crucial to consider transgender youth in these studies and this service for a variety of reasons. Puberty may have a significant impact on the voice, including voice deepening and some transgender youth use puberty blockers (Puberty Blockers, 2019). This sub-group can benefit substantially from an SLP providing services. (Russell & Abrams, 2019).

Most studies focused on the acoustic principles of transgender voice, which can provide relevant information to clinicians providing transgender voice services. However, relevant outcome measures related to transgender points of view could be useful in providing SLPs knowledge of this intervention, population, and competency. Although acoustic measurements such as pitch are the most frequent goals, pragmatic goals should also be considered. In a case of 25 trans women clients, 10 of these individuals wanted to include a goal relating to pragmatics, which can include goals such as turn-taking and tag questions (Hancock & Garabedian, 2013). The authors also found that 11 out of the 25 trans women wanted to work on non-verbal goals, such as body language. Pragmatic goals should be considered when providing this service because these goals can provide more confidence in these individuals despite being small.

The findings revealed that 123 transwomen served as participants and 0 transmen. Thus, we can conclude that there is little to no data on transmen. Overall, in healthcare in the United States, transmen seem to be underrepresented in the literature (MacCarthy, Reisner, Perez-Brumer & Operario, 2015). It is vital we have studies related to transmen for the following reason: there is a difference between the life experiences of transwomen and transmen, therefore, this service is different in these sub-groups. Also, transwomen and transmen rely on different hormones (e.g. estrogen and testosterone), which causes the voice to differ significantly (Schneider & Courey, 2016).

Although this study focuses on transgender participants, gender-affirming voice studies encompass more than just this specific population. There were no studies that focused on non-binary

individuals. This can lead to several implications for SLPs providing this service. Non-binary people want a voice that listeners cannot perceive as male or female, so assumingly in that pitch range that overlap between male and female. If SLPs do not have any scholarly research that they can draw upon to provide services to this population, they cannot truly understand their clients wants and needs.

Another limitation is that we searched the largest, most widely used databases and could have missed other published articles. The scoping reviewing process was time constricting due to the fact that this was an Honors Project, thus causing the PRISMA to be less detailed (e.g., why each article was deleted). But we looked at both basic science and intervention papers in major databases and still found that this is an under-studied population in the transgender community.

There is a difference between the two types of measures who found, one being external scientific evidence (i.e., acoustic measures) and the other being participant-centered measures, which are measures where researchers actually asked the participants for their point of view on the service. We find that these two types are more or less equal (seven acoustic, eight participants centered). Although there are only six studies, there is a good balance between these two types. But more research could be done on qualitative data, such as client perspectives.

For clinicians providing this service, what sources do they rely on for up-to-date information? Clinicians could be using non-peer-reviewed sources such as books and chapters, which is less than optimal since these are not subject to the same quality control as peer-reviewed sources. These low-quality sources could lead to poorer outcome measures and other problems when providing this service.

In conclusion, from the findings of this scoping review, we identified different sub-groups that need to be addressed in relation to transgender voice services, and in healthcare overall. We also found different goals that need to be addressed in order to provide more accurate and efficient services. These findings indicate that these sub-groups need more clinical research in order for clinicians to perform this intervention effectively.

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