

Transgender people and the role of voice in social situations

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Transgender is used to describe the spectrum of individuals whose gender identity does not conform with the sex assigned to them at birth. Transgender people may experience gender dysphoria. Gender dysphoria refers to the feelings of distress when there is a conflict between a person's gender identity and with the sex assigned at birth. Social dysphoria is a part of gender dysphoria that is often associated with social situations. Voice therapy is a one way to alleviate social dysphoria. Voice and transgender people are still a new area in voice therapy, but it is an ongoing topic due to social changes and a growing amount of speech therapy clients.

The aim of the present study was to find answers to the following research questions: 1) in which social situations do transgender people feel that the importance of their voice is emphasized, 2) what is the role of voice in social dysphoria, and 3) how the hormonal treatment, voice therapy and voice training has affected on satisfaction related to voice and its use.

This Master's thesis was based on an online survey. A total of 92 respondents answered the online questionnaire. The main results were: Meeting of new people was mentioned most often as the situation where the importance of voice was highlighted. Meeting of new people was also reported as a situation that is causing stress and when controlling voice is difficult. In addition, results revealed that voice is affecting on respondents' daily life on many different levels. Respondents reported that they have been misgendered because of their voice and therefore they avoid speaking in various social situations. Interestingly, only a few respondents had received speech therapy and only some of them were satisfied with the outcomes. The results of the survey revealed that what is happening in social situations and what kind of feelings and emotions they are causing may be more significant than specific situations or locations. It seems obvious that experiences of social dysphoria are often related to external factors such as experiences with misgendering.

Keywords

Transgender, gender-variant, trans women, trans men, non-binary, voice therapy, speech therapy, gender dysphoria, social dysphoria, minority stress

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## 1 Introduction

According to the American Psychological Association *transgender* is an umbrella term for the spectrum of individuals whose gender identity does not conform with the sex assigned to them at birth (APA, 2022). Transgender people may experience gender dysphoria. In the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) *gender dysphoria* is defined as a conflict between the gender that the person identifies with, and the sex assigned at birth, that causes distress and discomfort (APA, 2022). The World Professional Association for Transgender Health (WPATH) states that it should be noted that despite the medical diagnosis transgender people are not disordered (WPATH 2022).

The aim of this study is to examine transgender people and their voice in their everyday life. The objective is to find out if there are situations where the effect of their voice is emphasized and how does this affect in their everyday life. To be more specific, the study examines how participants evaluated the role of voice in experienced gender dysphoria and the impact of received treatment on the perceptions of voice. The results could be used to consider how speech therapy should be developed particularly for transgender people.

WPATH states that voice and communication are important part of gender expression (WPATH, 2022). In addition, WPATH (2022) presents credentials that should be required for Speech-language pathologists (SLPs) working with transsexual, transgender, and gender-nonconforming clients. These credentials include specialized training, basic knowledge of transgender health and continuing education. A recent study (Davies et al., 2015) highlights that transgender voice is still a new area in voice therapy and most studies have a small sample size. The author's Bachelor's thesis that was based on a literature review and investigated voice feminization, revealed the same problem (Halme, 2020). Lack of research and small sample sizes may be a reason for the shortage of evidence-based voice therapy methods for transgender voice.

In Finland, the number of people undergoing examinations on gender dysphoria is growing. According to Ristkari, Suni and Tyni (2018) in 2014, 200 people in Finland underwent examinations on gender dysphoria and in 2016 the number had increased to almost 800. In gender confirmation process, voice modification is an important part for many of them.

The following chapters of this introduction are focused on concepts that are relevant for the present study. I will first discuss gender diversity and gender dysphoria. Next, I will define

concepts of misgendering and minority stress. Also, I will present previous studies that are significant for the present study. Second, I will briefly describe treatment options for gender dysphoria and explain the relevance of voice therapy among them. Research questions are presented on chapter two.

## **1.1 Gender diversity**

The present study focuses on individuals who describe themselves as trans women, trans men, or non-binary. In this text, they are referred as transgender people. A trans man is usually someone who was assigned female at birth but whose gender identity is male and a trans woman someone who was assigned male at birth but who identifies as a female (Teich, 2012, p.10). Non-binary refers to a person who does not identify specifically male or female (National Center for Transgender Equality, 2021). According to Gay & Lesbian Alliance Against Defamation (GLAAD) the word transgender includes people who are going through the gender confirmation process but also people who don't (GLAAD 2021). It should also be noted that there are numerous other ways to define one's gender, for example, gender non-conforming, gender-variant or gender fluid person (Gender Diversity & Intersex Centre of Expertise, 2021).

### **1.1.1 Gender dysphoria and social dysphoria**

According to the Finnish Gender Diversity & Intersex Centre of Expertise (2021) gender dysphoria can be divided to body dysphoria and social dysphoria. Body dysphoria is always an individual experience, but it is often related to gendered body parts (Finnish Gender Diversity & Intersex Centre of Expertise, 2021). On a study of trans individuals' descriptions of body-specific gender dysphoria (Pulice-Farrow et al., 2019) the thematic analysis revealed the following themes: 1) disconnecting from body, 2) manifestations of distress, and 3) changes in dysphoria. Disconnecting from body was described as a feeling that something is wrong in their body. Manifestations of distress was explained as physical and emotional stress and avoiding behaviors such as inhibiting social interaction. Changes in dysphoria was described as a fluctuation in dysphoria in general or as a part of transition. Furthermore, it was argued that experiences of body dysphoria are fluctuating and do not always meet the medical criteria of gender dysphoria. In addition, the study highlighted the value of research that focuses on experiences of transgender people because it has potential to expand our knowledge that is critical to health care.

The present study focuses on social dysphoria. Social dysphoria refers to feelings of anxiety and distress in social situations that are caused by experiences of rejection related to the gender

identity (Finnish Gender Diversity & Intersex Centre of Expertise 2021). WPATH (2021) does not use the concepts of body dysphoria and social dysphoria but explains that associated gender roles and gendered body parts can be a part of gender dysphoria. It could be concluded that gender roles indicate social dysphoria and gendered body parts body dysphoria. However, the concept of social dysphoria is used in social media and digital platforms that provide information about gender diversity. According to digital platforms, such as YouTube and Trans Hub, trans people themselves recognize social dysphoria. Hence it is important to bring the concept also to the academic field where it is rarely used. For the present study I searched several databases, such as 1) Pubmed, 2) PsycInfo, 3) Psychology Database, 4) Sociology Database, 5) APA PsycInfo, and 6) Archives of sexuality and gender, with keywords “social dysphoria” but as expected, no matches were found.

There is a lack of studies on social dysphoria, however Galupo and her colleagues (2020) investigated gender dysphoria in a social context. Although the study does not mention social dysphoria, its topic is closely related to the concept. The researchers wanted to find out how transgender individuals experience gender dysphoria in social contexts. In their study 610 transgender individuals answered an online questionnaire including two open-ended questions. They found four socially salient themes regarding gender dysphoria which were: 1) external triggers, 2) internal processing, 3) interruption of social functioning, and 4) moderated by transition. By external triggers the study refers to experiences when, for example, a person is misgendered. Internal processing is explained as individuals' worry about other peoples' perceptions including a fear that their body will betray them, and interruption of social functioning is explained as limiting social interactions because social situations are causing anxiety and depression. They clarify that by limiting social interactions participants' intention was to alleviate gender dysphoria. The last theme, moderated by transition, is described as a situation where medical transition is used as a requirement by other people for recognizing one's gender. The study highlights that even if gender dysphoria is an internal feeling of distress, social context may alleviate or increase it. Finally, the researchers point out that voice has an effect on an internal processing and an interruption of social functioning. Therefore, it is important to further examine the effects of voice in social context.

The first hypothesis of this study assumes that voice and its congruence have a concrete effect on social behavior, and it has an impact on social dysphoria. Transgender people might avoid social situations because of their voice, and they are concerned that their voice might betray them.

### 1.1.2 Misgendering and minority stress

According to Ansara and Hegarty (2014), misgendering refers to the use of gendered language in which a person is referred to by gender that does not correspond to the person's identity. They point out that this may appear by 1) mispronouncing, 2) using objectifying biological language, or 3) by degendering. Mispronouncing happens when a pronoun that does not correspond to the person's identity is used. In using objectifying biological language, in turn, gender is often linked to primary sex characteristics. Degendering, conversely, is a form of misgendering where degendered language is used to describe only transgender people and all transgender people. In the recent study report by Howaski's team (2021), misgendering is divided into direct and indirect forms: direct misgendering means, for example, mispronouncing, and indirect misgendering is implying that a person is transgender.

Minority stress is a unique pressure experienced by ethnic, gender and sexual minorities and other, often stigmatized groups (APA, 2022). According to APA (2022) minority stress consists of experienced discrimination, harassment and even violence but it also includes fear of these situations. The minority stress model was developed by Meyer (1995, 2003) and was made to describe minority stress experienced by sexual minorities. According to the model, normativity of society creates distal and proximal stressors. Distal stressors are objective and environmental and could manifest themselves for example in discrimination. Proximal stressors mean internalized attitudes, for example internalized transphobia and internalized self-stigma. In addition to this, proximal stressors include a person's expectation of stressful events which leads to constant alertness (McLemore, 2018; Meyer, 1995, 2003; Hendricks & Testa, 2012). Galupo's team (2020) states that gender dysphoria and minority stress are related and suggest, in accordance with Meyer's model (Meyer, 1995), that external triggers, for example misgendering, act as distal stressors and gender dysphoria as a proximal stressor.

Also McLemore (2018) investigated misgendering from a perspective of minority stress. Their study included 410 transgender individuals living in United States. The results showed that participants frequently experienced misgendering and felt very stigmatized in these situations. Furthermore, it showed that gender identity was more important for participants who experienced higher levels of misgendering and felt more stigmatized. The results also showed a positive correlation between misgendering and psychological distress, and feeling of stigmatization and anxiety, depression, stress, and transgender stigma. McLemore (2018) suggests that the correlation between misgendering and psychological stress shows that misgendering is a minority stressor for transgender people. They also suggest that it would be

useful to identify situations in which misgendering is causing more stigma, and to clarify whether the location or context effects on experience of misgendering.

Because the aim of the present study is to explore the relationship between transgender people's voice and social context, it does not give straight answers for McLemore's questions, in which situations misgendering is causing more stigma and if the location or context effects on experiencing of misgendering. However, the present study may give suggestions because the theme of misgendering is noted in the questionnaire of the present study.

### **1.1.3 Trans visibility**

In addition to misgendering, being visibly transgender or not visibly transgender is a relevant concept for the present study. Transgender people themselves are speaking about concept called "*passing*". This means that other people are not making assumptions of a person being transgender (GLAAD, 2021).

Hines (2007, p.77) and Roen (2002) discuss about the concept of "*passing*". Roen (2002) writes about political movement that encourages transgender people to be visibly transgender by regarding this as a political argument. Yet, she explains that it is a difficult question since many find it hard to be visibly transgender due to discrimination. This is also pointed out by Hines (2007, p.77) who states that becoming visibly transgender is stressful and "*passing*" is important especially at workplaces where discrimination often occurs.

Oates and Dacakis (2015), in turn, discuss about "*passing*" and voice. They present several studies that have found a link between a gender congruent voice and "*passing*". For example, recent study (Van Borselt et al. 2009) suggest that physical appearance and voice are both affecting on perceptions of one's gender. They mention that physical appearance shapes listener's perception in situations where person's voice is not gender congruent. In addition, they argue that the importance of the physical appearance is less important when the voice is gender congruent.

## **1.2 Gender confirmation process and the role of one's voice in it**

A person with gender dysphoria may consider undergoing the gender confirmation process. According to Gender Diversity & Intersex Centre of Expertise (2022) gender confirmation process in Finland consists of the following three steps: 1) psychological evaluation and diagnosis, 2) treatment plan, and 3) recognizing the gender legally. Diagnoses in Finland are based on psychological evaluation and ICD-10 which is International Classification of



Diseases. Diagnoses are transgenderism (F64.0) and other gender identity disorder (F64.8). A diagnose is followed by a treatment plan and based on that a person has a possibility to receive hormonal treatment, voice therapy or surgical procedures such as mastectomy or tracheal shave. After the third step, recognizing the gender legally, a person can access genital surgery. Gender Diversity & Intersex Centre of Expertise (2022) notes that a variety of measures are required before the third step. A person must have diagnosis, Finnish citizenship, and a person must have reached the age of majority. In addition, infertility is required. Finally, a real-life test is required before the third step, and it usually takes one year. It should be stated that gender confirmation process is an individual experience and some transgender people go through the whole process and some just part of it (Gender Diversity & Intersex Centre of Expertise, 2022).

### **1.3 Voice therapy and transgender people**

WPATH (2021) lists 11 common targets in voice therapy regards to transgender clients. These targets are pitch, intonation, loudness, stress patterns, voice quality, resonance, articulation, speech rate and phrasing, language, and nonverbal communication. In addition, client's individual preferences should be highlighted (WPATH, 2021). No recommendations for duration or frequency are presented (WPATH, 2021). Oates and Dacakis (2015) states that a gender-congruent voice and the psychosocial wellbeing are related.

The following chapters focus on transgender people and their voice modification that aims to gender congruent voice. It should be noted that in addition to these procedures there are many who are practicing their voice independently. Yet, in spite of their plausible popularity no published studies were found that would have explored independent voice training of transgender people. However, social media and digital platforms are offering videos which have thousands of followers. So, it is clear that independent voice training is a significant procedure when trying to find a gender congruent voice.

Trans women who are experiencing gender dysphoria may seek voice feminization. Voice feminization is a modification of voice where the aim is to find a gender congruent voice (Oates & Dacakis, 2015). Hormonal treatment does not have same kind of effect for trans women and trans men because it does not affect on pitch range for trans women (Oates & Dacakis, 2015). Voice feminization can be surgical or non-surgical. Surgical procedures operated on the larynx are called phono surgery and the purpose is to improve or modify the quality of the voice (Concise Medical Dictionary, 2010). The surgical voice feminization usually aims on tension increase, mass thinning, and shortening of the length of vocal folds, since male vocal folds are

thicker than female vocal folds because of the testosterone (Kim, 2020). According to Oates and Dacakis (1983) the first general framework for non-surgical voice feminization in voice therapy was created in 1983. The targets were: increasing the fundamental frequency, intensity, prosody, voice quality and resonance. Fundamental frequency (F0) is the mean or average of the frequencies produced in a speech (Colton et al., 2011). It is stated that the borderline frequency for which voice is perceived as female has shifted during the years but since the 1980s the suggestion has been 180 Hz (Dacakis et al. 2012). It could be suggested that F0 is one of the most important factors in voice feminization and that sometimes it increases during the voice therapy despite of the therapeutic goals (Davies et al., 2015; Halme, 2020). However, as Colton and colleagues (2011) explain, F0 varies depending on the situation and it is affected by emotions. Often speech samples used in studies do not include spontaneous monologues (Halme, 2020).

When it comes to trans men and their voice, the effect of hormonal treatment is emphasized because it results in pitch lowering (Azul et al., 2015; Oates & Dacakis, 2015). However, it should be noted that not all trans men want hormonal treatment, and that voice has more features than just a pitch or a fundamental frequency. A recent study investigated trans men and their voice with a comprehensive review of voice literature (Azul et al., 2015). They found out that the extent and quality of such studies was limited. Yet, it was suggested that trans men may experience difficulties in vocal power, vocal control, glottal function, pitch, vocal endurance, and voice quality. In a follow-up study (2016), Azul continued investigating trans men and their voice. He conducted a study by using a semi-structured interviews with 14 participants. The study focused on the following questions: 1) how participants position themselves with regards to gender, 2) how they wish to be perceived and addressed in terms of gender, 3) which gender do they attribute to their own voice, 4) which gender attributions do they receive from others during phone interactions, and 5) how satisfied are they with the gender-related aspects of their vocal situations. The results showed that there was a variation between participants in how they position themselves and how they wish to be perceived. For example, some of the participants described themselves as non-binary. A high proportion of participants reported to be dissatisfied or not entirely satisfied on their voice and its congruence with their sense of self. Consequently, it was highlighted that trans men are heterogeneous population and that their vocal situations may have been taken on granted when it comes to research.

It is stressed that voice feminization is the most studied topic when it comes to transgender voice therapy and there is a lack of knowledge when it comes to androgyne voice (Davies et al., 2015). Compared to trans women and trans men, the voice of non-binary people has studied

even less. However, it has been pointed out that there is no research that support bimodal voice which means switching back and forth between different voice patterns (Davies et al., 2015). Recent study explored non-binary individuals and their voice in study consisting of an online questionnaire with 10 participants (Shefcik & Tsai, 2021). The aim was to develop an assessment tool for non-binary voice therapy clients based on the collected information. Two themes were studied: 1) desired voices and 2) challenging voice-related situations. Half of the participants desired voice that is more gender neutral. It should be noted, however, that results demonstrate the variation between non-binary people, who may prefer feminine, masculine, gender-neutral, or gender-expansive voices. The voice-related situations concerning participants' challenges were 1) talking on the phone, 2) talking to strangers or talking at work, 3) public speaking, 4) restaurants, legal situations, talking to a familiar partner and conversation after being misgendered, and 5) talking to other transgender people. The main reasons for participants' concerns were fear of being misgendered, self-awareness or lack of confidence, fear of other people's assumptions and worries because of previous negative experiences.

Second hypothesis of the present study expects that the most likely situations emphasizing the importance of voice among transgender people include: 1) talking on the phone, and 2) talking to strangers or talking at work. Since there are only few studies of the subject, the hypothesis is in line with the study by Shefcik and Tsain (2021). In their research, 60 % of the participants mentioned talking on the phone being a situation where they are concerned about their voice. It was also the most frequently mentioned situation causing concern related to voice. It is suggested (Meister et al., 2017) that misgendering on the phone is based on the lack of visual information. It appears that visual appearance on a perception of one's gender is a highly important factor (Van Borsel et al. 2009). As it relates to the second situation included in this study, work is mentioned in the research of Hines (2007, p.77) who explains the importance of not being visibly transgender at workplaces because of discrimination. This suggests that the work might be a place or situation where the importance of voice is emphasized.

Third hypothesis anticipates that hormonal treatment has positive effects on satisfaction of voice and voice use. Oates and Dacakis (2015) explains that a gender congruent voice is related to person's quality of life and that voice modification usually requires voice therapy, and sometimes also surgery is needed. The effect of hormonal treatment regarding voice is emphasized when it comes to trans men because testosterone lowers fundamental frequency (F0) significantly, and lower F0 values has been reported to correlate with voice satisfaction (Nygren et al., 2015).

## 2 Research questions and hypotheses

The present study concerns transgender individuals' experiences of the use of voice in social situations. In addition, the purpose is to investigate the role of voice in social dysphoria. Also, how previously obtained treatment has affected voice use is examined. This study will help the SLPs to understand the challenges of voice control in transgender people in their daily lives. In addition, study provides current information on transgender peoples' experiences of everyday social situations in Finland.

The research questions are as follows:

1. In what situations do transgender people feel that the importance of their voice is emphasized?
2. What is the role of voice in social dysphoria?
3. How has possibly received hormonal treatment, voice therapy and voice training affected on satisfaction of voice and voice use?

Based on previous studies, the hypothesis of the present study is that the importance of voice is emphasized when talking on the phone along with at work and when talking to strangers. In addition, it can be assumed that the voice is part of social dysphoria and that it affects behavior in social situations. Also, it can be expected that treatment has a positive effect on how a person perceives their own voice.

## 3 Methods

The aim of the present study was to explore the role of one's voice in the lives of transgender participants, and how voice is related to social dysphoria. In addition, the purpose was to examine hormonal treatment, voice therapy and voice training and their effects on satisfaction of voice and voice use. Data was collected through an online questionnaire (Appendix 1). This data gathering method was chosen because it enables a relatively large sample size. In addition, by using an online questionnaire the anonymity of respondents can be maintained and this may attract more respondents.

### 3.1 Participants

Regarding the participants, following inclusion criteria were used: 1) participants identified as trans woman, trans man, or non-binary, 2) were Finnish speaking, and 3) participants were residents in Finland. Altogether 92 individuals participated in the study, 11 % ( $n = 10$ ) of them

were trans women, 37 % ( $n = 34$ ) trans men, and 52 % ( $n = 48$ ) non-binary. The average age of participants was 26 ( $SD 7,93$ ).

### **3.2 Materials**

The questionnaire was developed by the author and designed to provide information on the issues necessary for the present research questions. The questionnaire included both open ended questions and multiple-choice questions because the aim was to collect both quantitative and qualitative data. The researcher consulted Seta's Gender Diversity & Intersex Centre of Expertise on matters related to terminology and questionnaire form.

The questionnaire consisted of a privacy statement, informed consent form, background information, multiple choice questions, statements with agreement scale, and open-ended questions. The actual questionnaire included 20 questions. The original questionnaire is in Finnish (Appendix 1) but it is also translated into English (see Appendix 2).

### **3.3 Procedure**

The data collection of the present study was conducted as an online survey. To develop the online survey, Webropol 3.0. was used to build the questionnaire. An ethical review statement was applied from The Ethics Committee for Human Sciences at the University of Turku before publishing the questionnaire. The questionnaire was distributed through Seta, a Finnish human rights advocacy organization. The questionnaire could be found from their website and from social media, such as Facebook and Instagram.

In addition, researcher advertised the questionnaire through social media as Facebook and Instagram. The data collection technique is based on snowball sampling. It is typical for the snowball sampling to look for a person who belongs to a target group of the study and who can promote the questionnaire and recruit potential participants (Goodman, 2011). In the present study the anonymity of the participants was ensured, so the questionnaire was not advertised through individuals but through organizations that could reach the target group. The questionnaire was open for responses from the 15<sup>th</sup> of July 2021 till the 23<sup>rd</sup> of September 2021.

### **3.4 Data analysis**

The analysis used both qualitative and quantitative methods. Qualitative methods were used to analyze open-ended questions.

As there are few studies on the subject so far, a grounded theory methodology was used as a tool to analyze qualitative data. Despite the hypothesis of the present study, it was plausible to assume that unpredictable factors would occur in a data. According to Mello and Flint (2009), grounded theory is often used when the subject includes individual experiences and social processes. Grounded theory is based on constant comparative method, coding, which includes categorizing, and saturation (Bryant & Charmaz, 2007). Saturation refers to a situation where new cases no longer offer relevant data for the theory under development (Saunders et al., 2018). In the present study, the raw data of the open-ended questions were analyzed one question at a time. The data was searched for repeated words and then similar words. This data was compared to each other and coded into groups. After that groups were coded into categories. Categories are referred to as main themes and groups are referred to as sub themes in the results of the present study. Quotes from answers for open-ended questions were used in the results to illustrate the themes to the reader.

Quantitative data was analyzed statistically, and quantification was used to count frequencies for the subthemes from qualitative data. For statistical analyses, IBM SPSS Statistics 25-program was used. SPSS independent samples t-test, one-way Anovas and Chi-squared test were used to investigate differences between groups.

### **3.5 Ethical considerations**

For the present study, an ethical review statement was applied from The Ethics Committee for Human Sciences at the University of Turku. Permission for the study was granted in June 2021. Also, Data Processing Impact Assessment (DPIA) of University of Turku was completed before conducting the survey. The aim of the DPIA is to help identify, assess, and manage the risks involved in processing personal data.

The questionnaire was accompanied by a cover letter informing the participants of the purpose of the study, the confidential and anonymous processing of the data, the author of the study and contact information. In the cover letter it was stated that even though all personally identifiable information will be erased, it is possible that participants might recognize themselves when reading the final paper. In addition, the cover letter informed that participants agreed to participate in the study by answering the questionnaire. If a participant wanted to discontinue answering in the questionnaire, answers were not saved.

While analyzing the data, only the secure network of the University of Turku was used. The data are stored in the Seafile service of the University of Turku and were processed only by the

researcher and her supervisor. The data will not be passed on or used in any other studies and will be destroyed at the end of the year 2022. However, it is possible that results of the present study are used in a scientific publication.

## 4 Results

The results are based on the analysis of both quantitative and qualitative data. Statistical analysis is supported by the thematic analysis in order to deepen the knowledge on social situations, voice and transgender people. The results of the study are presented in three chapters. The first chapter focuses on the role of voice, including different kinds of social situations and experiences of misgendering. The second chapter focuses on how one's voice affects dysphoria, and the third chapter focuses on experiences of treatment and voice training.

### 4.1 Voice and social situations

#### 4.1.1 Stressful situations

Respondents were asked to choose from six options in which situations they feel nervous because of their voice. It was possible for the respondents to choose several options. The options and results are shown in the table 1.

**Table 1**

*Frequencies and percentage of persons who feel nervous in different situations because of their voice*

Situation	Frequency	%
Meeting new people	68	82.9
Job interview	51	62.2
Performing	49	59.8
Talking on the phone	48	55.5
Going to the store	33	40.2
Something else	31	37.8

*Note.* Eighty-two participants answered this question.

Results revealed that majority of respondents felt nervous when meeting new people. Moreover, majority of the respondents indicated at least four of the given situations causing nervousness because of their voice.

It should be noted that although job interviews and performing might be exciting situations in general, the question targeted situations essential for voice. For the *something else* option, participants were able to describe in which situations they feel nervous because of their voice. The following situations were mentioned three times or less in the something else option: 1) online games and video calls, 2) talking in public places, for example, public toilets, 3) situations with authorities, 4) dating, 5) when talking louder, 6) at work with customers, 7) when controlling voice is difficult, and 8) when my voice is recorded. One of the respondents explains why public toilets and locker rooms are problematic:

*“I feel nervous when talking in public toilets or locker rooms. If I am at women’s side my voice is always too masculine. At men’s side I always talk so I would not cause confusion and so other people would believe that I am a man.”*

In order to deepen the analysis, responses to open ended questions were analyzed using thematic analysis. Respondents were asked to describe in what kind of situations their voice is causing stress or anxiety. Five main themes emerged from the qualitative analysis labeled as *meeting new people, unsafe situations, vocal expression, work and voice control*. Also, phone conversations, all social situations in general and conversations with authorities surfaced as main themes. Subthemes can give even more detailed information on the voice related situation causing stress and anxiety. Results are presented in table 2.

**Table 2**

*Main themes and subthemes on experiences of stress and anxiety because of voice in different situations, by number of responses mentioning the themes*

Main themes	Subthemes	Frequencies
Meeting new people		14
Unsafe situations	Misgendering	8
	With cis men	4
	When I am not accepted as who I am	1
	Comments about voice	1
	Public toilets	1
Vocal expression	Recorded speech	4
	Performing	2



	Excitement	2
	Singing	1
	Laughing	1
Work	Workplace	6
	Job interview	2
All social situations		6
At phone		6
With authorities		4
None		4
Voice control	Surprising situations	1
	Negative feelings	1
	When I can't control my voice	1

*Note.* Fifty-eight participants answered the question

The thematic analysis revealed a wide variety of situations causing stress and anxiety because of voice. In this respect, *meeting new people* was most often mentioned. This complies with the results of the quantitative analysis where over 80 per cent of respondents indicated that meeting new people causes nervousness because of voice (table 1). Respondents explained that sometimes situations with new people include misgendering and even fear on violence. One of the respondents described it like this:

*“I feel that my voice is revealing me, especially in situations where I meet a person for the first time. It is a situation where another person makes a narrow and a shallow evaluation of me and categorizes me – like we all do. It is difficult for me that my voice significantly increases the probability that the situation leads to misgendering. “*

The second main theme was titled *unsafe situations* under which several specific voice related situations were indicated as causing stress and anxiety. Particularly misgendering and fear of being revealed were mentioned as sources of stress. Unsafe situations were defined in thematical analyses as situations where respondents were misgendered or they were afraid of misgendering or being revealed for example with other men or when using public toilets One of the respondents described the experience like this:

*“I am insecure about my voice especially when I am with other men, for example in a bar and I notice that my voice is accidentally slipping to a more feminine*

*voice or to a higher pitch. In these situations, I am afraid that I reveal that I am transgender even if I know that my fear is not probably realistic.”*

Third main theme was *vocal expressions*. Vocal expressions included hearing one's own recorded speech and for example performing and singing. Two of the respondents reported that hearing their recorded voice is causing stress or anxiety because it reminds them that their voice is not congruent with their gender identity.

Fourth main theme that was found relates to *work*. At workplace speaking with coworkers and customers might cause stress. In addition, job interviews were mentioned. Two of the respondents mentioned that they are taken more seriously when they lower their voice.

In addition, phone conversations, all social situations in general and conversations with authorities, such as medical doctors, social services, and law enforcement were mentioned.

It should be noted, however, that four respondents emphasized that regarding their voice there are no situations that would cause stress. However, half of them reported that this has happened after hormonal treatments.

Fifth main theme was *voice control*. Participants reported that situations where they have difficulties to control their voice is causing stress, for example, surprising situations and situations where they are expressing strong negative feelings.

Results from open ended question indicate that meeting new people is experienced not only nervous situation in connection with voice but also a situation where their voice is causing stress or anxiety. Interestingly, job interviews and performing did not emerge frequently in answers for open ended question, even though in given options majority of respondents reported those situations as nervous situations. On the other hand, workplace was mentioned several times. The subtheme public toilets was mentioned in both answers as well as situation when controlling one's voice is difficult. In summary, the answers given to both questions supported each other and the themes of the given options were repeated in the answers for the open questions.

#### **4.1.2 Voice control in social situations**

The question on situations related to control of voice was also analyzed by using qualitative data. One of the open questions asked participants about their experiences of situations where controlling their voice is difficult. The responses were organized under main, and subthemes as

presented in Table 3. Two most often reported main themes were related to emotionality and work.

**Table 3**

*Main themes and subthemes on experiences of situations in which controlling one's voice is difficult, by frequencies of responses mentioning the themes*

Main themes	Subthemes	Frequencies
When emotional	Excitement	14
	Nervousness	6
	Under stress	6
	When tired	4
	Laughing	3
	Strong emotions	3
	Insecurity	2
Work	At work	6
	Job interviews	1
With unknown people		5
Unexpected situations	Answering the phone	2
	Small talk with strangers	2
Singing		3
At phone		3
When speaking loudly		3
Under the influence of alcohol		2
Sexual situations		1

*Note.* Fifty-nine participants answered this question.

Thematic analyses revealed that several respondents have difficulties to control their voice in situations where they are *emotional*. Respondents wrote that they have difficulties to control their voice when they are experiencing feelings as excitement or nervousness. In addition, strong emotions were mentioned in general.

Second main theme that was found was *work*. Some of the respondents wrote that they don't have time to focus on their voice at work. On the other hand, some respondents explained that they work at customer service, and they were used to apply higher voice in customer situations. They explained that the higher voice is still coming through in some situations even they are currently mostly using lower voice. One of the respondents wrote that "*At work if I haven't*

*prepared myself to talk with a lower voice, I easily start to talk with my so-called customer service voice which is even higher than a normal voice. “*

Also, participants reported that control of voice is difficult with unknown people and in unexpected situations, such as having small talk with strangers. In addition, the following situations were mentioned three or less times: singing, phone conversations, situations that requires loud voice, when they are under the influence of alcohol and sexual situations.

In summary, controlling one's voice was reported most difficult in emotional situations and at work. Contrary to the results of the previous studies meeting new people did not emerge in the answers. However, situations with unknown people and small talk with strangers was reported situations when controlling one's voice is difficult.

### **4.1.3 Positive situations**

Participants were asked to describe situations when they have felt good about their voice. Some of the answers included several situations and 56 respondents answered the question. The thematic analysis showed that several respondents ( $n=10$ ) indicated that they feel good about their voice when they are *singing*. One respondent describes the experiences related to singing with other people after hormonal treatment saying that “*new voice...it felt good and right*”. Another respondent describes the experience like this:

*“Singing is my hobby and I love it. I am happy and proud of my singing voice, and it is an important part of my identity. I have considered hormonal treatments but the risk of my voice changing or losing it, is one of the biggest reasons why I don't want it. Even though I do not like my speech voice which is too high, singing soprano brings me great joy and pride.”*

The second main theme ( $n=7$ ) in positive situations were situations where respondents voice is *naturally lower* for example in the mornings. One of the respondents wrote that when they get a cold or a flue, they feel gender euphoria because of their voice. Sore throat makes their voice sound “*more masculine or gender neutral*”.

Third main theme *hormonal treatment* was also mentioned several times ( $n=6$ ). Respondents wrote that after hormonal treatment they have felt good about their voice. The fourth main theme was *safe space* ( $n=6$ ) which means situations with friends or community, situations where respondents are not misgendered and when they are accepted as who they are.

In addition, *recorded voice* ( $n=3$ ) and *positive feedback* ( $n=4$ ) were mentioned in answers. Also, respondents wrote about positive situations when they were *able to control their voice* ( $n=3$ ) such as when on a date or talking with the bus driver. The last theme was *voice modification* ( $n=2$ ) which means that participant experienced their voice and situation positive when they were whispering or lowering their voice.

To summarise, singing was mentioned most often as a voice related positive situation. In addition, naturally modified voice was reported several times as a positive situation meaning situations when their voice was lower because of, for example, flue. Interestingly, supporting the treatment-related hypothesis, six participants reported the state after hormonal treatment as a positive situation. An interesting point was also that answers revealed the main theme *safe space* in contrast to the previous results and *unsafe situations* (table 2).

## 4.2 Voice and social dysphoria

In this study, social dysphoria related to voice was analyzed by using both quantitative and qualitative data. Participants were first asked how much dysphoria their voice is causing or has caused to them. Answers were given by using the scale from zero (no dysphoria at all) to ten (my voice has caused me a lot of dysphoria). Trans men most often reported highest levels of gender dysphoria caused by voice ( $M= 7.7$ ,  $SD= 2.3$ ,  $Md = 8.0$ ) followed by trans women ( $M= 7.1$ ,  $SD=2.6$ ,  $Md= 6.5$ ) and non-binary participants ( $M=6.0$ ,  $SD=2.8$ ,  $Md= 6.0$ ). The groups differed significantly ( $F= 4.21$ ,  $p=.018$ ). The qualitative data was collected by using open ended questions on the experiences of social situations and dysphoria. The results are presented below (Table 4).

### 4.2.1 The effect of one's voice in social situations

Respondents were asked to describe how their voice affect social situations in their lives. Results were drawn from the thematic analysis and are presented in table 4. Participants described situations and feelings that were caused by using their voice in social situation.

**Table 4**

*Main themes and subthemes on experiences of voice having an impact on social situations, by frequency of responses mentioning the themes*

Main themes	Subthemes	Frequency
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Negative reactions by others	Misgendering	18
	Assumptions of gender or sexual orientation	3
	Transphobia and insults	1
Feelings	Dysphoria	13
	Self-awareness	9
	Anxiety	7
	Insecurity	4
	Fear of being revealed	3
	Requires energy	2
	Stress	1
	Grief	1
	Feels as an outcast	1
	Dissociation	1
	Shame	1
	Uncomfortable feeling	1
People don't see me right	1	
Concrete effects on behaviour	Avoid talking in social situations	13
	Modifying voice depending on situation	5
	Difficulty meeting new people	5
	Preparing	1
	Difficulties to talk	1
	Impairs ability to work	1
	Volume of speaking voice is low	1
	Withdrawing from social situations	1
No effects	No effects after hormonal treatment	4
	No effects	1
Positive effects	My voice has conforming effect on gender identity	3

*Note.* Sixty-one participants answered the question.

Thematic analysis revealed that voice is affecting social situations at several different levels. The main themes were labeled *negative reactions*, *feelings*, *concrete effects on behavior*, *no effects*, and *positive effects*.

The most common negative reaction by other people was misgendering the person, based on their voice. One of the respondents writes that “*In situations when I have not spoken yet I have addressed with right pronouns, but when people hear me speak, I usually get misgendered.*” Several other respondents described their experiences on the same way and wrote that this is affecting especially situations when meeting new people.

Feelings included participants’ feelings towards their own voice, feelings that their voice was causing and feelings towards situations when they were using their voice. Under this theme, the

most feelings were related to dysphoria, self-awareness, and anxiety. One of the respondents describes their voice related dysphoria like this:

*“My voice is the worst cause of dysphoria. Sometimes I forget how I look but I can’t forget how I sound. My voice is always present, and I hear myself all the time. It feels like someone else is talking for me. And it feels like other people are hearing someone else, not me. If I could speak with a lower voice, I would feel heard for the first time.”*

Concrete effects on behaviour included changes in behavior that are caused by negative reactions by others and feelings. One of the respondents writes that they *“avoid talking with new people and approach them, especially if [I’m] alone “*.

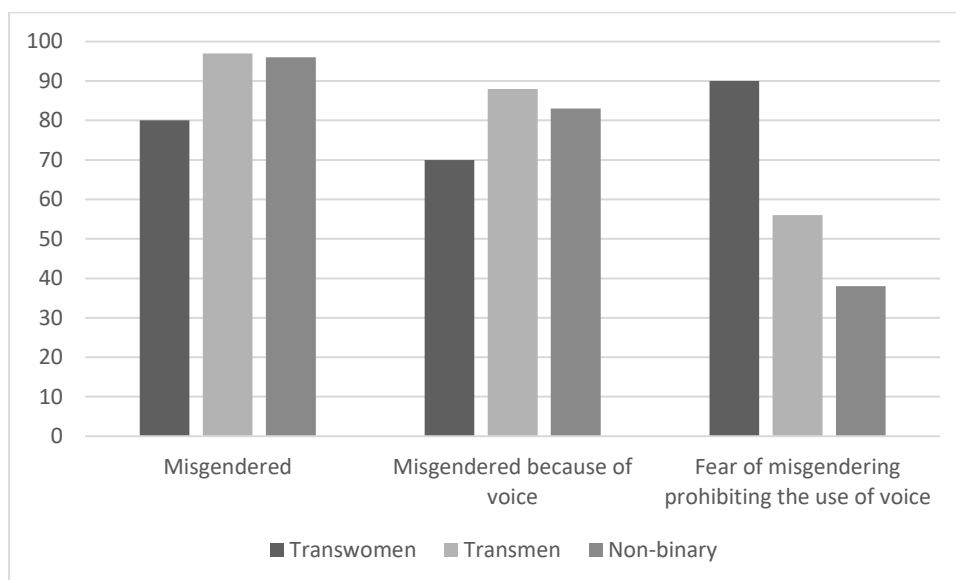
No effects included answers where participants wrote that their voice has no impact on social situations. Four of them reported that their voice has no effect on social situations anymore because they had received hormonal treatment. Hormonal treatment was mentioned also when participants described positive effects. Positive effects included answers where participants wrote that their voice conforms their gender identity. One of the respondents describes their experiences after hormonal treatment: *“ Now it has positive effects unlike before my hormonal treatment. Now my voice has conforming effect on my gender identity.”*

The results regarding the effect of voice on social situations showed that the use of voice in social situations affects the person's inner experiences and feelings, but more importantly it can cause negative reactions in other people. Interestingly, the effect of hormonal treatment showed in the answers to this question as well.

#### **4.2.2 Misgendering**

The questionnaire contained three questions on misgendering. The statistical analysis showed that 95 % ( $n = 87$ ) of the participants reported that they have been misgendered in their life, 83,5 % ( $n= 76$ ) that they have been misgendered because of their voice, and 50 % ( $n = 46$ ) that they would use their voice more if they would not be afraid of misgendering. Differences between trans women, trans men, and non-binary people are presented in Figure 1.

Figure 1. *Percentages of persons experiencing misgendering, by different respondent groups*



*Note.* Ninety-two participants answered questions about misgendering and fear of misgendering. Ninety-one participants answered the question about misgendering because of voice.

### 4.2.3 Vocal congruence

Next, it was examined if participants felt that their voice was congruent with their sense of self. Answers were given on a five-point scale where 1= never, 2= rarely, 3= sometimes, 4=often, 5= almost always. The results revealed that majority of participants felt only sometimes that their voice was congruent with their sense of self ( $M= 2.7, SD 1.21, p < 0.01$ ). Trans men, trans women and non-binary groups did not differ significantly from each other. Next, this item was recategorized into a binary variable, creating one group who did not feel congruence (options 1,2 and 3) and one who did (options 4 and 5). These groups were labeled as group one and group two. Then these two groups were compared on other variables measuring the respondents' feelings about their voice and social situations. Groups differed significantly in eight out of nine items ( $p < 0.01$ ). Only in the item "I avoid speaking on the phone" result was not statistically significant ( $p = 0.01$ ). Results are presented in table 6.

**Table 6**

*Comparison between vocally non congruent and congruent groups for different items*

	Not congruent ( $n=70$ )	Congruent ( $n=22$ )
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Items	M	SD	M	SD	t
I'm insecure about my voice	4.13	1.14	2.64	0.70	5.82*
I'm less social because of my voice	3.03	1.14	1.36	0.66	6.50*
It makes me nervous to speak with unknown people	3.67	1.21	1.68	1.13	6.82*
I avoid speaking on a public place	3.07	1.39	1.64	1.05	4.46*
I avoid speaking on the phone	3.00	1.42	2.09	1.27	2.66**
Because of my voice, I feel uncomfortable to talk with my friends	2.70	1.21	1.36	0.58	7.02*
When I speak, I must focus on my voice	3.36	1.01	2.05	1.05	5.28*
Using my voice in social situations in causing me stress	3.64	1.10	1.95	0.84	6.59*
I have difficulties to control my voice when I'm nervous	3.80	1.38	2.18	1.22	4.93*

*Note.* Ninety respondents answered the question.

\*  $p < 0.00$ ; \*\*  $p > 0.01$

### 4.3 Voice therapy, hormonal treatment and voice training

Participants were asked if they had received hormonal treatment, or speech therapy and if they had practiced their voice independently. Results of the statistical analysis are presented in Table 7.

**Table 7**

*Frequencies and percentages of persons participating in hormonal treatment, speech therapy, and voice training*

Treatment or training	Frequencies	%
Independent voice training	66	75
Hormonal treatment (testosterone/estrogen)	31	33.7
Speech therapy	14	15.2

*Note.* Eighty-eight participants answered the question about independent voice training and ninety-two answered the question about hormonal treatment and speech therapy.

In addition, participants were asked to indicate how the above-mentioned procedures (Table 8) had affected their dysphoria. Forty-nine participants answered the question. Seven participants reported that independent voice training has alleviated their dysphoria. Furthermore, participants reported that even small changes they were able to do with their voice increased their self-confidence. Interestingly, only twelve participants out of 31 who had received hormonal treatment, reported that hormonal treatment had alleviated their dysphoria.

Experiences from speech therapy were contradictory. Some of the participants reported that speech therapy helped them to accept their own voice and some others found it useful in combination with hormonal treatment. On the other hand, some of the respondents reported that speech therapy wasn't useful because the amount of therapy was too small, or the exercises felt wrong or unnatural. In addition, some of the participants reported that they were not offered speech therapy.

Participants were also asked about speech therapy and its duration and effects. Results revealed that 40 % of participants who had received speech therapy received it five times or less and 40 % five to ten times, and as expected, only 41 % of respondents felt that speech therapy increased their satisfaction with their voice.

#### 4.3.1 Independent voice training

When asked how the person has practiced their voice, following options were presented 1) I recorded my own voice, 2) I looked at videos online, 3) I imitated other speakers, and 4) something else. Respondent had a possibility to choose more than one option. The results are presented in Table 8.

**Table 8**

*Frequencies and percentages of persons exercising independent voice training, by the type of exercise*

Exercises	Frequencies	%
Recorded my own voice	37	56.1
Searched for training videos online	40	60.6
Imitated other speakers	31	47
Something else	19	28.8

*Note.* 75 % ( $n = 66$ ) of the participants reported training their voice independently.

In the last option, 4) something else, the respondent had a possibility to write freely about their voice training. Respondents wrote that they have been practicing their voice by singing, doing exercises related to singing and by taking singing lessons. Respondents also wrote that they have been practicing their voice by trying to speak with a lower or a higher voice, doing vocal exercises for speakers and by improving their vocal hygiene. One respondent wrote that they had participated in group training.

#### 4.3.2 Effects of voice training, hormonal treatment and voice therapy

Cross tabulation was used to examine the relation between vocal congruence and independent voice training, hormonal treatment, and voice therapy. Again the item *my voice is congruent with my sense of self* was recategorized into a binary variable, creating one group who did not feel congruence (options 1,2 and 3) and one who did (options 4 and 5). These groups were labeled as group one and group two. Then these groups were compared with groups who had practiced independent voice training or received hormonal treatment or speech therapy. The results indicate that none of the groups particularly benefited from independent voice training regarding vocal congruence. Furthermore, trans women or non-binary people did not benefit from hormonal therapy or speech therapy either. On the other hand, trans men benefited from hormonal treatment, as expected, but they did not benefit from speech therapy either. The results are presented in Table 9.

**Table 9**

*Numbers and percentages of participants with different voice training and treatment options and how it correlates with vocal congruence, by different respondent profiles*

		Not congruent		Congruent	
		<i>N</i>	%	<i>N</i>	%
<b>Independent voice training</b>	Trans women	7	77.8	2	22.2
	Trans men	15	57.7	11	42.3
	Non-binary	27	87.1	4	12.9
	Total	49	74.2	17	25.8
<b>Hormonal treatment</b>	Trans women	6	75.0	2	25.0
	Trans men	3	20.0	12	80.0
	Non-binary	5	62.5	3	37.5
	Total	14	42.5	17	54.8

<b>Speech therapy</b>	Trans women	5	71.4	2	28.6
	Trans men	1	33.3	2	66.7
	Non-binary	4	100	0	0.00
	Total	10	71.4	4	28.6

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## 5 Discussion

As pointed out the aim of the study is to investigate social situations and voice through transgender people's experiences. In addition to this, the role of voice in social dysphoria was examined as well as the voice treatment in relation to the satisfaction of voice.

Based on the hypothesis, it was expected that from different social situations talking on the phone, talking in the workplace, and talking to strangers would emerge in the answers. The hypothesis for this proved to be partially correct. Also, when studying social dysphoria and the role of voice in it, the assumption was that the voice has concrete effects on social situations. This assumption proved to be correct and the role of voice in social dysphoria was very broad. When examining received treatment and satisfaction with one's voice, the results were contradictory. However, hormonal treatment had a positive effect on the voice, as expected.

In the next chapters the results of the present study are discussed and compared to previous studies. The first chapter focuses on social situations, in the second one, social dysphoria, misgendering and minority stress are discussed, and the third chapter deals with the treatment and training, and their effects.

### 5.1 Social situations

The first research question asked about the situations in which transgender people feel that the importance of their voice is emphasized. The findings support clearly the hypothesis on the assumption that meeting of new people may be a stressful situation concerning transgender people and voice. Meeting of new people was mentioned most often in the answers. It was reported as a situation that is causing stress and anxiety alongside with the situations related to misgendering. Meeting of new people was also reported as a situation when controlling of voice is difficult. Meeting new people was associated with fear of being misgendered, fear of causing confusion in other people, or fear of being visibly transgender. It could be suggested that

transgender people may experience more misgendering with new people and because of that, those situations are emphasized.

Along with these findings, majority of participants reported that job interviews as well as workplaces in general are making them nervous because of their voice. These results are consistent with Shefcik and Tsai's study (2021), in which they found that talking at work concerned the respondents.

However, answering on the phone did not emerge in responses as often as expected. Half of the participants reported answering on the phone as a nervous situation. The reason why answering on the phone has been considered an important situation when studying transgender people may be that studies have previously focused on how visual perception affects gender perception (Borsel et al., 2009; Meister et al., 2017). One explanation for this discrepancy may be that the respondents consider face-to-face situations to be more important or more personal than phone conversations.

Singing as a social situation, in turn, was mentioned ten times as a situation in which respondents had felt good about their voice. Both, the respondents who had received hormonal treatment and those who had not received hormonal treatment, mentioned singing as a situation when they had felt good about their voice. In addition, ten respondents wrote that they have been practicing their voice by singing, doing exercises related to singing and by taking singing lessons. It could be concluded that singing practices have a positive effect on voice. This suggests that singing may potentially reduce dysphoria in some people.

It was also pointed out that situations where one's voice is naturally lower were reported as positive situations. This suggests that respondents would prefer that their voice would come out naturally and without having to modify it by themselves.

When asked in which situations participants have difficulties to control their voice, the importance of emotions was emphasized. Excitement was the most indicated emotion but also nervousness and being under stress were mentioned. Expressing one's feelings has an important meaning in self-expression and it is obvious that feelings are heard in the voice. Despite this, the connection between voice and emotions from the perspective of voice modification has not been the most attractive field among the scholars.

## **5.2 Misgendering, minority stress and social dysphoria**

The second research question focused on social dysphoria and what is the role of voice in it. Trans men most often reported highest levels of gender dysphoria caused by voice followed by

trans women and non-binary participants. The hypothesis assumed that voice and its congruence have a concrete effect on social behavior. The results reveal that voice is affecting participants' social situations in many different levels. When asked how voice is affecting social situations, misgendering appeared in most answers as a main reason, but dysphoria and emotions were also highlighted. Regarding emotions, self-consciousness and anxiety were mentioned most often. Many participants also reported that they avoid speaking in social situations in general because of their voice. It has been suggested that transgender people limit their social interactions because social situations are causing anxiety (Galupo et al., 2020). This assumption is reinforced by the present study, which clearly suggests that external factors and incidents in social situations might cause anxiety.

Furthermore, results show that most participants have experienced misgendering and most of them have experienced it because of voice. In addition, half of participants reported that they would use their voice more if they would not be afraid of misgendering. When the impact of voice on participants' social situations was asked the most common answer was that their voice is causing misgendering. Answers did not concern the exact situations in which misgendering took place, but several respondents reported they were afraid of misgendering when meeting new people. Fear of being misgendered with new people could be seen as a demonstration of a minority stress. If so, it could be stated that the results of the present study support McLemore's (2018) theory suggesting that misgendering is a minority stressor for transgender people. The effects of misgendering should be taken seriously as they may have an impact on a societal level. Half of participants of the present study reported that they would use their voice more willingly if they were not afraid of being misgendered.

In addition to misgendering, several emotions emerged in answers. For example, emotions such as anxiety and self-awareness were mentioned. Self-awareness was also mentioned in the study by Shefcik and Tsai (2021). In this connection, it should be mentioned that Meyer's minority stress model (2003, 1995) consists of proximal and distal stressors where distal stressors refer to environmental factors such as misgendering while proximal stressors refer to internalized attitudes such as internalized self-stigma. It could be argued that heightened self-awareness could be an example of internalized self-stigma.

### **5.3 Hormonal treatment, voice therapy and voice training, and their effects**

Third research question asked whether the treatment had a positive impact on the satisfaction of voice and voice use. When looking at the group who had received hormonal treatment, it was found out that 80 % of trans men felt that their voice is gender congruent. When

investigating the effects of speech therapy, the results reveal that under half of the participants who had received speech therapy experienced it being effective. Not surprisingly, most of the participants had practiced their voice independently, but interestingly they did not regard it to have any significant effect on their vocal congruence.

The third hypothesis was that the treatment has positive effects on the satisfaction of voice and voice use. The findings did not, fully support this hypothesis. The results were contradictory. When examining the effect of hormonal treatment, voice therapy and voice training, the effects of hormonal treatments came to the fore. The results revealed that when comparing the groups, the connection between vocal congruence and hormonal treatment is the highest for trans men. This is in line with previous studies, as testosterone affects the fundamental frequency of the voice which again correlates with voice satisfaction (Nygren et al., 2015).

Results from speech therapy were contradictory. Only 41 % of respondents felt that speech therapy increased their satisfaction with their voice. Moreover, only four of the respondents who had received speech therapy felt that their voice is congruent with their sense of self. Regarding the respondents who were unhappy with speech therapy, it was reported that duration of therapy period was too short, or exercises were not helpful. Most participants who had received speech therapy, had had less than ten appointments with speech therapist. There are no general recommendations regarding the duration of speech therapy periods but there is a list of common targets concerning the voice therapy with transgender clients (WPATH, 2021). Based on the results of the present study, it is not possible to conclude how the lengths of the therapy periods were determined. However, it is clear that the objectives of therapy were not realized with most respondents. Despite these problems, some of the participants reported that speech therapy helped them to accept their own voice, and some found it useful together with a hormonal treatment. It should be noted that the proportion of respondents who received speech therapy was small and is limiting how far-reaching conclusions can be made. However, in the case of such a limited group of speech therapy clients, it cannot be assumed that it automatically lowers the reliability of the results.

With a view to a social media and digital platforms it was clear that many transgender people practice their voice independently. Accordingly, the results of the present study reveal that 75 % of all participants had practiced their voice independently. When pondering what makes independent voice practice so common, two possible factors can be found. First, material for vocal exercises is easily available. Most of the participants who had practiced their voice independently had searched for information about training videos online. Compared to a professional speech therapy with a trained therapist, online material is free and always

available. Secondly, participants reported that even small changes that they were able to do with their voice increased their self-confidence. Majority of respondents practicing their voice independently felt that their voice is not congruent with their sense of self. It could be argued that non-binary people benefited the least from independent voice training. One reason for this might be that there is a lack of knowledge when it comes to androgyne voice (Davies et al., 2015). On the other hand, voice feminization is the most studied topic related to transgender voice (Davies et al., 2015) and still majority of trans women who had practiced their voice independently did not feel that their voice is congruent with their sense of self. From trans men who had practiced their voice independently 42.3 % felt that their voice is congruent with their sense of self. The reason that independent training appears to be more effective for trans men may be that some of the respondents had practiced their voice independently after hormonal treatments. When examining the connection between independent voice practice and vocal congruence in general it can be noticed that independent voice training is not very effective in terms of vocal congruence.

#### **5.4 Limitations and strengths**

The strengths of the present study could be seen to rest on an interesting research setting and the successful collection of data. The data collection of the present study was conducted as an online survey with an intention to attract as many respondents as possible. A lot of data was accumulated, and the respondents had usually answered every question on the questionnaire. The aim was to collect both quantitative and qualitative data, and it was successfully implemented.

The problem of snowball sampling is that the variation of the participants cannot be controlled. This could be considered a limitation because the group sizes differed from each other, and participation of trans women remained small

The fact that the research was carried out in Finnish could be considered a limitation of the study. A larger sample size would have been possible if the survey had also been translated into Swedish and English. A larger sample would have made it possible to further study group differences in detail, as it seems that experiences between trans men, trans women and non-binary participants may differ.

#### **5.5 Conclusions and suggestions for further studies**

The present study showed that there is room for improvements in the field of speech therapy services. Speech therapists working with transgender people should be aware of stress that



misgendering and stigma are causing. In addition, it should be noted that transgender people are seeking natural voice that is congruent with their sense of self. One could ask whether it is necessary to talk about gender congruent voice at all, since voice is a personal characteristic. This is something that should be considered in the health care of transgender people, in order to develop safe and healthy ways to modify the voice, whether it is through speech therapy, hormones or surgical procedures.

Since transgender peoples' access to healthcare services is not always simple, it would be necessary to investigate what other means can be used to modify the voice. It could be reasonable, for example, to study further the impact of singing and singing exercises on the voice of transgender people. Information would be needed whether the positive feelings associated with singing are related to, for example, guided exercises or choral singing.

Although the purpose of the present study was to find out concrete situations in which the importance of voice is highlighted, it soon became clear that the questions on what is happening in these situations and what kind of feelings these situations are causing are even more important to clarify. The answers to the survey and the results of the present study could be considered to reflect societal attitudes in Finland. The concept of social dysphoria is broad and the experiences of it are individual. Yet, it is largely caused by surrounding factors. It deserves more interest among scholars, because it may offer crucial information about gender dysphoria and attitudes as well as problems related to the use of voice among gender variant people.

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## Appendices

### Appendix 1. Kyselylomake

Syntymävuosi:

Olen

- a) transsukupuolinen / transtaustainen nainen
- b) transsukupuolinen / transtaustainen mies
- c) muunsukupuolinen / ei-binääri

Olen saanut hormonihoitoja (estrogeeni, testosteroni)

- a) kyllä
- b) ei

Minulle on tehty kirurgisia toimenpiteitä äänihuuliin

- a) kyllä
- b) ei

Olen käynyt puheterapiassa

- a) kyllä
- b) en

Jos vastasit edelliseen kyllä, niin miten pitkä puheterapiajakso oli?

- a) alle 5 kertaa
- b) 5–10 kertaa
- c) 10–15 kertaa
- d) enemmän

Jos olet käynyt puheterapiassa, onko se vaikuttanut tyytyväisyytesi äänesi suhteen?

- a) kyllä
- b) ei

Olen itsenäisesti harjoittanut ääntäni

- a) kyllä
- b) en

Jos vastasit edelliseen kyllä, niin miten harjoitit sitä? (voit valita useamman kohdan)

- a) äänitin omaa ääntäni
- b) etsin opetusvideoita netistä
- c) jäljittelin muita puhujia
- d) jotenkin muuten, miten? \_\_\_\_\_

Kerro halutessasi omin sanoin, miten mahdolliset edellä mainitut toimenpiteet (hormonihoito, kirurgiset toimenpiteet, puheterapia, äänen itsenäinen harjoittaminen) ovat vaikuttaneet dysforiaasi?

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**Valitse vaihtoehto, joka kuvaa parhaiten kokemustasi (1 = ei koskaan, 2 = harvoin, 3= toisinaan, 4= usein, 5= aina)**

Koen, että ääneni kuvastaa todellista minääni	1 2 3 4 5
Koen epävarmuutta äänestäni	1 2 3 4 5
Olen vähemmän sosiaalinen ääneni vuoksi	1 2 3 4 5
Minua jännittää puhua tuntemattomien kanssa ääneni vuoksi	1 2 3 4 5
Välttelen julkisilla paikoilla puhumista	1 2 3 4 5
Välttelen puhelimesta puhumista	1 2 3 4 5
Ääneni takia minulla on epämukava olo, kun puhun läheisten ihmisten kanssa	1 2 3 4 5
Minun pitää keskittyä puhuessa siihen, miltä ääneni kuulostaa	1 2 3 4 5
Äänenkäyttö sosiaalisissa tilanteissa aiheuttaa minulle stressiä	1 2 3 4 5
Kun jännitän, minun on vaikea hallita ääntäni	1 2 3 4 5

Minua jännittää ääneni takia seuraavat tilanteet (voit valita useamman):

- kaupassa asioiminen
- puhelimesta puhuminen
- uusiin ihmisiin tutustuminen
- esiintyminen
- työhaastattelut
- muu, mikä? \_\_\_\_\_

Olen kokenut väärinsukupuolittamista

- kyllä
- en

Minut on joskus väärinsukupuolitettu ääneni takia

- kyllä
- ei

Käyttäisin ääntäni enemmän, jos en pelkäisi tulevani väärinsukupuolitetuksi

- kyllä
- en
- en osaa sanoa

Kerro halutessasi omin sanoin, millaisissa tilanteissa sinulla on vaikeuksia hallita ääntäsi?

---

Kerro halutessasi omin sanoin, miten ääni vaikuttaa sosiaalisiin tilanteisiin elämässäsi?

---

Kerro halutessasi tilanteesta, jossa olit tyytyväinen ääneesi?

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Kerro halutessasi omin sanoin, millaisissa tilanteissa äänesi aiheuttaa sinulle stressiä / ahdistusta?

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Miten suuri osuus nyt tai aiemmin koetusta dysforiasta liittyy/liittyi ääneen?

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## Appendix 2. Questionnaire

Birth year:

I am

- a) trans woman
- b) trans man
- c) Non-binary

I have received hormonal treatment

- a) yes
- b) no

I have undergone surgical procedures

- a) yes
- b) no

I have received speech therapy

- a) yes
- b) no

If you answered yes, what was the duration of speech therapy?

- a) under 5 sessions
- b) 5 – 10 sessions
- c) 10 – 15 sessions
- d) more than 15 sessions

If you have received speech therapy, has it affected on satisfaction of voice use?

- a) yes
- b) no

I have practiced my voice independently

- a) yes
- b) no

If you answered yes, how did you practice your voice?

- a) I recorded my own voice
- b) I searched training videos online
- c) I imitated other speakers

d) something else \_\_\_\_\_

Describe how above-mentioned procedures (hormonal treatment, surgical procedures, speech therapy and independent voice training) has affected on your dysphoria?

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**Choose an option that best describes your experience (1 = never, 2 = rarely, 3= sometimes, 4= often, 5= almost always)**

I feel that my voice is congruent with my sense of self	1 2 3 4 5
I am insecure about my voice	1 2 3 4 5
I am less social because of my voice	1 2 3 4 5
It makes me nervous to speak with unknown people	1 2 3 4 5
I avoid speaking on a public place	1 2 3 4 5
I avoid speaking on the phone	1 2 3 4 5
Because of my voice, I feel uncomfortable to talk with my friends	1 2 3 4 5
When I speak, I must focus on my voice	1 2 3 4 5
Using my voice in social situations is causing me stress	1 2 3 4 5
I have difficulties to control my voice when I am nervous	1 2 3 4 5

The following situations make me nervous because of my voice:

- a) Going to the store
- b) Talking on the phone
- c) Meeting new people
- d) Performing
- e) Job interview
- f) Something else \_\_\_\_\_

I have been misgendered

- c) yes
- d) no

I have been misgendered because of my voice

- c) yes
- d) no

I would use my voice more if I would not be afraid of misgendering

- d) yes
- e) no

Describe in what kind of situations you have difficulties to control your voice?



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Describe how voice is affecting on social situations in your life?

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Describe a situation when you were happy with your voice?

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Describe in what kind of situations your voice is causing you stress or anxiety?

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How much dysphoria your voice is causing or has caused to you?

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