

Module 3: BMPF7008

Work-Based Learning Project

Trauma and Its' Effects on Singers' Experience of Their Vocal Function

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Context - Psychogenic Dysphonia

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- Most of the research surrounding trauma's effects on singing is associated with psychogenic dysphonia.
- *Psychogenic Dysphonia*: a voice disorder that refers to the loss of one's voice, specifically in the absence of apparent pathology (structurally or neurologically)
- The loss of volitional control over phonation in psychogenic dysphonia seems to be related to psychological processes such as anxiety, depression, conversion reaction, or personality disorder (Baker, 2003).
- Most commonly seen in women who have experienced situations that would lead to conflict over speaking (Sudhir et al., 2009).
- The research behind it is limited to discovering its onset and potential treatments.

Context (continued)

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- Little to no research that focuses on the individual's experience
- Difficult to find research with people without an official PTSD diagnosis
- Downfalls of this:
 - Puts people into two categories: 1) with PTSD and without PTSD
 - This is a dangerous standard, as it could assume that those without a PTSD diagnosis have not experienced trauma, which is false.
 - There are a substantial number of people with probable PTSD who are currently undiagnosed.
 - Access to PTSD diagnosis and what this means for research
- This research aims to contribute to the growing field of voice and mental health, with a focus on the common population and their personal experiences of vocal function.

Personal Learning Goals

I hoped to learn more about the impacts of trauma on the voice. Once learning about this, I'd like to research what we can do to aid in providing relief of those symptoms. For example, if individuals experience breathiness after trauma, what exercises can be implemented into voice lessons to provide relief. Additionally, I hope to learn more about data collection, the interview process, and research designs in general - i.e., learning by doing.

Outlined Intention

- Qualitative research design, focusing on the participants and their experiences.
- First: Literature Review
 - Provides context and a general understanding of current research
- Second: One-on-one interviews with the participants via Zoom.
 - Unstructured Interview: acts as a free-flowing conversation between the interviewer and the respondent.
 - This structure creates ample opportunity to gather the person's information while also getting a rich idea of the interviewee's experiences.
 - Flow, sequence, and content of unstructured interviews are largely determined by the interviewer's experiences, training, and the respondent's answers (Mueller & Segal, 2015).
 - Mueller and Segal (2015) state that the largest advantage to using an unstructured interview is that it provides extensive opportunities for empathizing with the interviewee and builds trust with them.
- Observation of participants
 - Listening to qualities in their speaking voice
 - Examples: breathiness, vocal fry, etc.
 - Inspiration of qualities noted came from CAPE-V form

Literature Review

- Psychogenic dysphonia is a voice disorder characterized by the presence of functional voice symptoms without apparent organic or structural pathology (Roy et al., 2019).
- It manifests as changes in voice quality, pitch variability, and effortful speech production, often associated with underlying psychological stressors or trauma (Roy & Roy, 2020).
- Studies have highlighted the role of stress, anxiety, and emotional trauma in triggering or exacerbating functional voice disorders (Donovan & Roy, 2018).
- In terms of diagnostic criteria and assessment, psychogenic dysphonia poses challenges due to its variable presentation and the absence of structural abnormalities. Voice assessment protocols often involve comprehensive voice evaluation, psychosocial history-taking, and collaboration between otolaryngologists, speech-language pathologists, and psychologists (Dedhia et al., 2020).
- Treatment strategies for psychogenic dysphonia typically integrate behavioral interventions, voice therapy, and psychotherapeutic approaches (Dedhia et al., 2020).
- Recent advancements in understanding psychogenic dysphonia emphasize the importance of a multidisciplinary approach for effective management.
- Current research underscores the need for comprehensive assessment protocols and integrated therapeutic interventions to effectively address the complex interplay between psychological factors and voice symptoms.

Literature Review: Singing with Psychogenic Dysphonia

- Psychogenic dysphonia presents unique challenges for singers due to its impact on vocal control and quality (Roy et al., 2019).
- Research on singing with psychogenic dysphonia has highlighted various aspects, including the manifestation of vocal symptoms during singing, the psychological underpinnings, and therapeutic interventions (Pedro et al., 2019).
- Studies indicate that individuals with psychogenic dysphonia may experience varying degrees of difficulty when singing.
 - Vocal symptoms such as pitch instability, reduced vocal range, and inconsistent voice quality are commonly reported (Roy & Roy, 2020).
- Clinically, understanding the specific challenges faced by singers with psychogenic dysphonia is crucial for developing tailored interventions.
- Future research should focus on refining diagnostic criteria, exploring innovative therapeutic modalities, and evaluating long-term outcomes to improve clinical management and support for affected individuals (Roy et al., 2019; Dedhia et al., 2020).
- Effective management of singing with psychogenic dysphonia requires a comprehensive approach that addresses both the vocal symptoms and underlying psychological factors to support singers in achieving optimal performance and emotional well-being (Pedro et al., 2019).

Literature Review: Trauma's Effect on the Singing Voice (Aside from Psychogenic Dysphonia)

- Physical trauma to the voice Examples: laryngeal injury or surgery
 - Can directly affect vocal fold tissue integrity and biomechanics, leading to changes in vocal range, pitch control, and overall vocal stability (Heman-Ackah et al., 2017).
- Psychological trauma can also profoundly impact the singing voice.
 - Emotional distress, anxiety, and post-traumatic stress disorder (PTSD) can manifest as functional voice disorders, affecting vocal production and performance confidence.
 - Individuals may experience symptoms such as vocal tension, breathiness, and reduced vocal endurance, which can hinder expressive vocal delivery and artistic interpretation (Donovan & Roy, 2018).
- Effective management of trauma-related vocal issues often requires a multidisciplinary approach.
 - Integrative approaches that address both the physical and emotional aspects of trauma are not only recommended, but essential for restoring vocal health and enhancing singing performance.

Literature Review: Trauma's Impact on the Respiratory System

- Traumatic experiences can profoundly impact various physiological systems in the body, including the respiratory system.
 - Research suggests that the respiratory response to trauma involves complex interactions between the autonomic nervous system, hormonal pathways, and psychological factors (Watkins et al., 2012).
 - 1. Alterations in breathing patterns
 - Hyperventilation or breath-holding
 - 2. Heightened sympathetic nervous system activity (Bonde et al., 2016).
 - This heightened activity can result in increased respiratory rate and shallow breathing, contributing to a sense of dyspnea (shortness of breath) (Broderick et al., 2022).
 - Chronic activation of these stress responses may also lead to respiratory muscle tension and fatigue over time (Broderick et al., 2022).
- Trauma-related stress can trigger or worsen asthma and chronic obstructive pulmonary disease (COPD) through inflammation, immune dysregulation, and altered perception of dyspnea (Watkins et al., 2012).

Methodology

- In order to appropriately focus on singers' experience of their vocal function, it was crucial that individuals were asked about their trauma experience and how they felt that impacted their voice.
- One-on-one interviews were best for this goal, due to the specific nature of this topic and how this study focuses on each individual's experience.
- Therefore, this project lies within the phenomenology viewpoint.
- Phenomenology is a philosophy that focuses on people's conscious experiences, such as judgments, perceptions, and emotions.
- Cons: sample sizes must be small to due its intimate nature
- Pros: phenomenologist researchers are able to retrieve data from these experiences that they could not get from a survey (Torrance, 2012).
- When conducting a study from a phenomenology lens, data is retrieved via interviews with people (Connelly, 2010). This is exactly how this project was designed, through the phenomenological framework.
- To improve the reliability of findings, triangulation was achieved through a literature review, one-on-one interviews, and the researcher's auditory experience of listening to the participants (Torrance, 2012).

Participants

- 5 individuals who consider themselves to have experienced trauma
 - PTSD diagnosis not required
- The term “trauma” for the purposes of this study is defined as “an incident that caused you physical, emotional, spiritual, or psychological harm.”
 - I intentionally left open the type of trauma, as everyone experiences this differently. It is not up to the researcher to determine what is deemed legitimate trauma or not, as this focuses on the individual’s experience.
- Participant selection: Contacting various SLPs and voice teachers across the United States.
- 20 total inquiries
 - 5 people selected randomly using a random name generator
- 2 males and 3 females with a mean age of 46
 - All United States citizens, considered themselves a singer, had taken previous voice lessons, and had experienced trauma.
 - None of the participants had a PTSD diagnosis.

- Computer with Webcam
- Zoom Access
- CAPE-V Form
 - Measured roughness, breathiness, strain, pitch, and loudness.
 - Did not ask the interviewees to read the top sentences.

Consensus Auditory-Perceptual Evaluation of Voice (CAPE-V)

Voice Sample #: _____

The following parameters of voice quality will be rated upon completion of the following tasks:

- Sustained vowels, /a/ and /i/ for 3-5 seconds duration each.
- Sentence production:
 - The blue spot is on the key again.
 - How hard did he hit him?
 - We were away a year ago.
- Spontaneous speech in response to: "Tell me about your voice problem." or "Tell me how your voice is functioning."

Legend: C = Consistent I = Intermittent
 MI = Mildly Deviant
 MO = Moderately Deviant
 SE = Severely Deviant

					SCORE
Overall Severity	_____	_____	_____	C I	____/100
	MI	MO	SE		
Roughness	_____	_____	_____	C I	____/100
	MI	MO	SE		
Breathiness	_____	_____	_____	C I	____/100
	MI	MO	SE		
Strain	_____	_____	_____	C I	____/100
	MI	MO	SE		
Pitch	(Indicate the nature of the abnormality): _____			C I	____/100
	MI	MO	SE		
Loudness	(Indicate the nature of the abnormality): _____			C I	____/100
	MI	MO	SE		
_____	_____	_____	_____	C I	____/100
	MI	MO	SE		
_____	_____	_____	_____	C I	____/100
	MI	MO	SE		

COMMENTS ABOUT RESONANCE: NORMAL OTHER (Provide description): _____

ADDITIONAL FEATURES (for example, diplophonia, fry, falsetto, asthenia, aphonia, pitch instability, tremor, wet/gurgly, or other relevant terms): _____

Clinician: _____

Measures

Questionnaire for the interviews:

- Name, Age, Location
- Tell me about your singing experience. How long have you been singing? What is your training like?
- As you know, one of the requirements to be involved in this study was the experience of trauma. Would you mind discussing this trauma? You do not have to share more than you are comfortable.
- Have you noticed/Did you notice any specific changes in your voice or singing ability during or after traumatic experiences? If so, tell me about it.
- Can you elaborate on any physical sensations you associate with singing in relation to past trauma?
- In what ways do you believe trauma has influenced your vocal technique or approach to singing?
- Can you recall any specific instances where trauma has significantly impacted your ability to sing or perform?
- Have you noticed any differences in the way you approach singing or interact with your voice compared to singers who have not experienced trauma?
- Have you sought any professional assistance or therapy to address trauma-related issues affecting your vocal function? If so, has it impacted your singing experience? If yes, how?
- Do you have any insights or lessons learned from your experiences as a singer dealing with trauma that you believe could benefit other singers facing similar challenges?

Ethics

Potential risks for participants:

- Further traumatization
- Transfer of personal data.

How risks were mitigated:

RE: Further Traumatization

- Provided interviewees with a check in/check out process
- Provided interviewees with a licensed counselor to speak with following the interview.

RE: Transfer of personal data

- Data was kept on a password-protected computer that no one else could access, minimizing the risk of personal safety.
- After anonymizing the interviews, I sent a transcript to each participant of their own interview.
 - They had to approve of the transcript before it could be used further.

Once the interviewees approved the transcript, I gave the participants a written debriefing that provided my contact information and reminders about their ability to withdraw, mental health helplines, what the study is, and how the data will be used. This would remind them of the consent they gave earlier via signed form.

I provided resources to counselors and mental health help (i.e. <https://mentalhealthhotline.org> and contact information of therapists in the participant's area).

Analysis: Discussion

- I used Interpretive Phenomenological Analysis (IPA).
 - IPA is based in phenomenology, which focuses on individual's experiences; hermeneutics, which is the theory of interpretation; and ideography, which is derived from one single case (Toy, 2024).
 - This focuses on individual's perceptions, rather than gaining objective statements, which made it seem like the right choice for this study.
- IPA recommends 5 participants for Master's degree level work, thus the sample size for this study (Smith & Fieldsend, 2021).
- Inductive analysis of the participants' interviews was undertaken. This was necessary as opposed to deductive analysis because deductive analysis focuses on testing a theory and takes on a "top down" approach, whereas inductive is more exploratory and flexible (Vanover et al., 2022).
- The data was collected via theoretical sampling.

Findings: Interview Results

- After conducting all of the interviews and reading over the transcripts, I pointed out recurring themes and patterns that were mentioned by participants.

The table below shows the themes that were identified by each participant:

Participant A	Strained voice, inconsistent breath, wide vibrato, decrease in overtones, compressed posture
Participant B	Tight stomach and throat, tension in head and neck, loss of phonation in upper range, “crunch in posture”, difficulty breathing
Participant C	Loss of range, tight throat
Participant D	Loss of phonation while singing, loss of upper note
Participant E	Tight shoulders, tense throat, chronic cough, “closed” throat, frequent hoarseness, loss of phonation in upper range, difficulty with deep breathing

Findings: Interview Results

- All participants stated they felt their traumatic experience affected their voice.
- Following their traumatic experiences:
 - 4 out of 5 participants reported decrease in range
 - 3 out of 5 participants claimed to feel tightness in various parts of their bodies (shoulders, head, neck, stomach, throat)
 - 3 out of 5 participants noted differences in their breathing, including inability to take deep breaths
 - 1 participant reported frequent hoarseness and chronic cough
- Participants describing their emotions after experiencing the aforementioned effects on their voices::
 - Participant E: “I lost everything.”
 - Participant B: “I lost my identity. Singing was a form of cultural expression.” followed by, “I felt my impulses were stifled, due to lack of self trust and wanting to hold on to control.”
 - This is interesting to note because many trauma-informed practices include restoring choice and control to trauma survivors (Wilson et al., 2015).
 - Participant A: “I felt that I resorted to my childlike self, because that’s when I was safe.” followed by feeling “stuck” and “not following impulses.” Participant A also mentioned pushing through and following impulses despite her mental blocks was one of the only things that seemed to help.

Findings: Auditory Assessment

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- Below are the vocal qualities I noticed in each participant’s voice:

Participant A	Increased pitch, slight vocal fry
Participant B	Roughness, increased vocal fry
Participant C	“Wobbly” (very tremor like), slight vocal fry
Participant D	Increased vocal fry
Participant E	Tremor, vocal fry

What is important to note about the above observations is that they increased in severity when the individual was discussing their specific traumatic experience(s). In Participant B’s case, his pitch started out higher, but as the interview went on, his voice relaxed. Vocal fry was present in all 5 individuals, with all having a “pressed” or effortful sound to their voice.

Analysis: Conclusion, Recommendations, Limitations

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- The aims of this work-based project were to examine the effects of trauma on singers' experience of their vocal function.
 - Many effects have been identified, with one commonality being “loss of range” – see table of findings on previous slide.
- Further areas of research could be examining specific types of trauma as well as delving deeper into what is causing the loss of range in these individuals—whether it's muscular, laryngeal, or psychological.
- Moving forward with the data I have collected, I'd like to research what we can do about these effects (vocal fry, loss of range, etc.)

Personal Reflections: Learning Outcomes

- It is important that we as Voice Teachers learn how to best accommodate our students. This is to make our lessons as accessible as possible for all divergences, whether physical or mental.
- Knowing how trauma can affect the voice is important as we are vocal habilitators.
- We must know when to send a student to a voice therapist.
- As mentioned earlier, it takes a team of people.
- Knowledge is power as we move forward helping students in their vocal journeys.

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