

## **Title. Prevalence and risk factors of voice disorder symptoms in student teachers: A pilot study.**

### **Description of Project**

#### Prevalence and Definition of Voice Disorders

Voice is the wire that is used to create speech. Many depend on their voice to perform occupational activities. In the U.S. alone, an estimated one quarter of those employed use their voice as a critical aspect of their work (Titze et al., 1997; National Center for Voice and Speech [NCVS], n.d.). Some professions inherently put individuals at higher risk (e.g., teachers, salespeople, clergy, singers) than others to develop voice disorders due to their profession's heavy vocal load (Cantor-Cutiva, 2018; Titze et al., 1997; NCVS, n.d.; Verdolini & Ramig, 2001). The National Institute on Deafness and Other Communication Disorders states that around 17.9 million adults or 7.6% of the population that are 18 or older report having some sort of difficulty with their voice (National Institute, 2024). A voice disorder is characterized by changes in voice quality, pitch, and loudness that are inappropriate for an individual's age, gender, cultural background, or geographic location (Bradley, 2010; American Speech-Language-Hearing Association [ASHA], n.d), and can be caused by a variety of factors including occupational hazard (Bradley, 2010).

#### Prevalence of Voice Disorders in Teachers and Student Teachers

Teachers are reported to have a higher number of voice disorders due to the high vocal demands (Wasay et al., 2023). These vocal demands include speaking loudly and for a long period of time. Over 4 million teachers in the United States are a part of this group. Roy and Tanner mention that teachers tend to use their voices often to speak loudly in a classroom. What makes matters worse is that they have to speak over a noisy classroom as well as they are exposed to a variety of respiratory infections. (Roy & Tanner, 2013). A study done by Roy and colleagues, discovered a prevalence of voice disorders in teachers at 11% compared to 6.2% for the general population (Roy et al., 2004). Teachers reported having to miss at least one day of work a school year due to the symptoms associated with a voice disorder (Roy et al., 2004).

Contrary to the plethora of information related to voice disorders among teachers, very few studies have examined voice problems among student teachers. To date, only four peer-reviewed studies, all of them outside the United States, have been published investigating risk factors for voice disorders in student teachers, a group working under similar conditions to teachers (e.g., talking for long periods of time with increased volume, speaking above background noise). Abreu Vasconcelos Alves et al., (2021) found that out of 70 student teachers in their study, around 51 percent reported a dry throat, 48.6% a dry cough, 37.1% stated they had hoarseness and 35.7% experienced phlegm. Similar, Ohlsson et al., (2016), found that 48% of student teachers at the University of Gothenburg and Linnaeus mentioned a tired voice at the at the end of the class time period. Another study conducted by Grillo and Brosious confirmed that student teachers at the beginning of their career experience vocal fatigue early on determined by the Voice Handicap Index (Grillo and Brosious, 2019). In Norwegian student teachers, the Vocal Handicap Index and Screen 6 revealed that a common symptom of student teachers was a sensation or a lump in the throat (Greve et al., 2018).

The purpose of the present study is to add to the scant existing knowledge base regarding voice disorder prevalence for student teachers and identify self-reported risk factors associated with voice disorder symptoms for this population in the U.S.. The overall objective of this line of

research is to determine the need for preventative vocal hygiene educational programming aimed at improving healthy use of voice for student teachers.

In the present pilot study, the researcher will address the following research questions based on a small sample of student teachers from the College of Education, Health, and Human Services (CEHHS) at the University of Nebraska at Omaha (UNO): (1) What are the self-reported prevalence and risk factors for voice disorders symptoms among student teachers? (2) Of these, what are most commonly self-reported? (3) Do student teachers self-report engagement in behavioral risk factors negatively associated with vocal use? (4) Do student teachers self-report engagement in behaviors associated with healthy vocal hygiene habits? (5) Are there common factors across student teachers associated with voice disorder symptomology?

## **Activities/Methodology**

### Participants.

A link to an anonymous online Qualtrics questionnaire will be emailed to student teachers from CEHHS completing their field school externship.

### Proposed Study Procedures.

The online questionnaire will use variety of existing questionnaires for student teachers targeting factors related to voice use and voice disorder characteristics including those related to occupation. The present study questionnaire will consist of four distinct domains: demographic information (n=21 questions), general health information (n=11 questions), voice symptomatology (n=12 questions), and lifestyle factors (n=20 questions). The demographic information questions are based on those used by Kyriakou and colleagues (2017) and Roy and colleagues (2004). It related to participant inclusion/exclusion criteria as well as characteristics of their most frequently taught class (e.g., duration, number of students, typical loudness level) and questions regarding gender, age, race/ethnicity and highest degree held. The general health questions are derived primarily from those utilized by Kyriakou and colleagues (2017). These consist of questions about respondents' experiences with more general health issues that may relate to vocal quality and use (e.g., experiences with reflux, heartburn, asthma, colds, and allergies).

The 12 voice symptomatology questions are those of the Screening Index for Voice Disorders (SIVD: Ghirardi et al., 2013). The SIVD is a screening tool developed to quantify self-perceived voice problem severity of teachers (Ghirardi et al., 2013). The SIVD includes twelve symptoms with ordinal response categories (i.e., never, sometimes, almost always, always) regarding how often the symptom was noted to be present by the responder. To score, one (1) point is indicated for any symptom noted as "almost always" or "always" present and no points (0) are awarded for "never" and "sometimes" responses. A total score is then will be obtained by adding up the number of points for all twelve symptoms represented. According to Ghirardi and colleagues (2013), a score of 5 or higher indicates the likely presence of a voice disorder and is accompanied by a strong suggestion to consult with a voice specialist for a full assessment. The final questionnaire domain, lifestyle factors, will be based on behavioral risk factors associated with the presence of voice disorder explored by Kyriakou and colleagues (2017) as well as behaviors generally associated with healthy vocal hygiene habits explored by Bolbol and colleagues (2017). These questions include historical and present engagement in smoking, drinking, and medication use in addition to having stress and anxiety. Behaviors generally

associated with healthy vocal hygiene habits included in this domain feature questions relate to water consumption, vocal rest, exercise, and sleep.

### Analysis

Descriptive and inferential analyses of participant responses will be conducted to address the study's research questions. Descriptive statistics (including means and standard deviations) will be compiled using Microsoft Office Excel software. Inferential analyses were conducted using the Statistical Package for Social Sciences (SPSS) software.

### **Project Timeline**

<b>Semester</b>	<b>Month</b>	<b>Task</b>
Fall 2024	October/November	Identify thesis committee members
	December	Start IRB process
Spring 2025	January	Secure IRB approval, write initial proposal, apply to present poster at state and national conventions held in Fall 2025
	February/March	Present initial proposal and make changes suggested by committee
	April/May	Data Collection and prepare proposal for ASHA
Summer 2025	June-August	Data Analysis
		Write results and prepare to submit NSLHA presentation
Fall 2025	September	Present at NSLHA Convention (Nebraska)
	November	Prepare and present poster at ASHA
	December	Present at ASHA Convention (Washington D.C.)
Spring 2026	February-March	Compile thesis into final draft and prepare PowerPoint for defense, Oral Exam (defense) and present findings at UNO Research Fair, implement any changes from committee, file electronic copy to library

**Student/Faculty Roles:** I, Katie Markvicka, will be analyzing the data with the close supervision of Dr. Scheffel. Dr. Scheffel will be available for guidance throughout the above timeline, and we will meet regularly to ensure my questions are answered, interpret study findings, and to monitor progress throughout this process.

**Previous Funding:** I have not received any internal or external funding. This is my first grant application.

**Budget:**

<b>Budget</b>	<b>Cost</b>	<b>Description</b>
Student Stipend	\$4,900	I will be receiving compensation from my graduate assistantship at the University of Nebraska at Omaha from 08/24-05/25. Starting 06/25, I will not be compensated in any way.  Earning this grant will give me the opportunity to devote my time outside of clinical placements and classwork to solely focus on my thesis project. I will spend an estimated 20 hours per week in the Summer of 2025 to complete this project. This includes analyzing data and writing results.
Materials and Supplies	\$100	Materials and supplies will include office supplies such as printing and poster presentation equipment.
<b>TOTAL</b>	<b>\$5,000</b>	

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**Letter of Mentor Support:**



COLLEGE OF EDUCATION,  
HEALTH AND HUMAN SCIENCES  
Department of Special Education  
and Communication Disorders

January 18, 2025

Dear GRACA Grant Selection Committee:

It is a pleasure to support Katie Markvicka's GRACA Grant application. I have known Katie as an undergraduate and graduate-level course instructor for approximately four years. Katie's dedication to her studies was always evident, and her GPA of 4.0/4.0 is a testament to her academic excellence. As a graduate student at UNO, she worked as a clinic graduate assistant (GA) for the speech-language pathology program at the CEHHS. Her work was precise, timely, and impeccable. Kate is a hard worker and self-motivated student and accepts feedback well.

I fully support her effort to secure GRACA funding for her project, "Future Teachers' Self-Perception of Vocal Symptoms and Knowledge about Vocal Health and Hygiene." Katie has already completed the CITI training and is currently working on securing IRB approval and compiling an extensive literature review for this project.

Although the content of Katie's is related to one of my lines of research, the prevalence and risk factors of voice disorder symptoms in university instructors, she is the lead investigator on this proposed project, which will be her master's degree thesis. As a faculty mentor, I supervise her work throughout the thesis project. Specifically, I will be available for (a) regular meetings, (b) assistance as needed with data collection and analysis, (c) supplement her knowledge base of the topic, and (d) guidance in the dissemination of her findings.

I am excited to work with her on the proposed study. Her project has great potential for acceptance at state- and national-level conference presentations and manuscript publication. I fully support Katie's GRACA Grant application and look forward to continuing my work with her along this line of research!

Sincerely,

A handwritten signature in black ink that reads "Lucia Scheffel".

Lucia Scheffel, Ph.D., CCC-SLP  
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