
In order to better understand the levels of voice disorders, etiologies, and rehabilitation, these questions are directed to physicians in the San Joaquin Valley Air Pollution Control District (SJVAPCD). The purpose of this study by a speech-language pathologist is to assess: a) what the main voice function diagnoses consist of; b) what pre-surgery/radiotherapy output levels and symptomology data is gathered and; c) the quantity of voice function patients referred for outpatient, home health, or eTherapy treatment. The results will be published in a de-identified dissertation project at Nova Southeastern University as part of a doctorate in Speech-Language Pathology.

You are invited to participate in a 15 question research project documenting the current knowledge of how the pollution in the five counties with the most deteriorated air quality is perceived to affect voice disorders found here.

This applied dissertation was designed to examine the relationships between the severities of symptoms of laryngeal disturbances involving the oropharynx in a geographic environment in order to classify and compare them to the air quality scales. Research by the Air Resources Board of the total respiratory system between the sinuses and the lungs has been absent in vocal function research evaluating the impact of pollutants on the oropharynx and larynx. Voice disorders reported in the seven counties may show predictable rates based upon the seasonal pollution rates. This study is intended to raise awareness regarding the main vocal function diagnoses, symptomology data, environmental factors, and geospatial relationships inhibiting voice therapy progress near the San Joaquin Valley Air Pollution Control District (SJVAPCD) monitor sites.

For this study, we are asking Ear, Nose, and Throat (ENT) physicians, or the staff from these offices (RN, LVN), Speech Pathologists, and Radiation-Oncology physicians and nurses working with patients in the seven counties of the SJVAPCD to answer 15 questions relating to air pollution and voice disorders. Participation is anonymous and voluntary. Any publications arising from this survey will not highlight individual responses; rather a summary will be generated according to the air quality district segmentation and mapped in a geographic information system searchable database. If you would like to participate in this study, and meet the following criteria:

- ASHA Certified Speech Pathologist, ENT physician, Radiation-Oncology Physician, or nursing support staff in these settings
- Your practice resides in the San Joaquin Valley Air Pollution Control District (SJVAPCD) of Stanislaus, Merced, Fresno, Madera, San Joaquin, Kings, and Kern in California
- You are concerned that the present research in the field of air quality lacks information regarding the physiology between the sinuses and the lungs has been absent in vocal function research in the Air Research Board of California

An online survey will be available. Please read the attached participation letter. The 15 questions will take about 5 minutes to answer. Please understand that even though you may not benefit directly from this study, you have the opportunity to enhance the understanding of the effects of our environment on the health and well-being of many California residents.

Participation is completely voluntary and no payment will be provided. If you have any questions please feel free to contact me at vocalfunctionairpollution@gmail.com

Begin the survey at: <http://vocalfunctionairpollution.webstarts.com>

1) Please tell us in which county your office is located (only choose your primary location):

☐ San Joaquin County ☐ Stanislaus County ☐ Merced County ☐ Madera County
☐ Fresno County ☐ Kings County ☐ Kern County

2) How far do your patients travel to receive ENT/speech therapy services?

☐ 0-10 miles ☐ 10-20 miles ☐ 20-30 miles ☐ 30-40 miles ☐ 40-50 miles ☐ more than 50 miles

3) Approximately how many patients per month are referred to a Speech-Language Pathologist for a Voice Evaluation?

☐ 0-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20 or more

4) How often is a patient referred to a Speech Pathologist for a pre-procedure (radiation-oncology, surgery, procedure) voice evaluation?

☐ almost never ☐ rarely ☐ sometimes ☐ regularly ☐ often

5) In order of importance, which symptoms index interviews are administered?

☐ Voice Handicap/Function Index (VHI/VFI)

☐ Consensus Auditory-perceptual Evaluation of Voice (CAPE-V)

☐ PVFM Paradoxical Vocal Fold Movement Questionnaire (throat tightness and breathing difficulties)

☐ Voice Related Quality of Life (V-RQOL)

☐ GRBAS Voice Rating Scale

☐ Oates Perceptual Voice Profile

6) How important is pre-procedure (surgery, radiation-oncology, other) evaluation of qualitative voice clarity, tone, and pitch data to the recovery process?

☐ almost never important ☐ rarely important ☐ sometimes important ☐ very important ☐ always

7) In quantitative order of treatment, what portion of your voice function patients have a diagnosis of (number 1 as most quantity number 5 least quantity)

☐ Neurogenic disorders? (Parkinson Disease, vocal tremor, thyroid surgery, Spasmodic Dysphonia)

☐ vocal nodule, cyst, or polyp related

☐ tissue damage due to LPR, Reflux, or GERD

☐ recovering from radiation-oncology treatments related to head and neck cancer

☐ Dysphagia – swallowing disorder

8) In quantitative order of treatment, what portion of your voice function patients have a diagnosis of (number 1 as most quantity number 5 least quantity)

☐ Xerostomia, dry mouth

☐ oral mucositis hyposalivation with increased saliva viscosity

☐ trismus impairing mastication

☐ neurogenic immobility influencing reduced oral movement

☐ chronic cough

9) How many patients present with symptom clusters related to dysphonia (e.g. mucositis, dysphagia, dry mouth, nausea, and fatigue)

☐ 0-5 ☐ 5-10 ☐ 10-15 ☐ 15-20 ☐ 20 or more

Can you describe some symptom clusters?

10) Since your practice falls within the San Joaquin Valley Air Pollution Control District, what percentage of these environmental complaints of dysphonia do you believe are related to your diagnoses (please mark a percentage of occurrence)

a) smog?(smoke, ozone, hydrocarbons, nitrogen oxides)

☐ 0-15% ☐ 15-25% ☐ 25-50% ☐ 50-75% ☐ 75-100%

b) dust and harvesting?

☐ 0-15% ☐ 15-25% ☐ 25-50% ☐ 50-75% ☐ 75-100%

c) pesticide use?

☐ 0-15% ☐ 15-25% ☐ 25-50% ☐ 50-75% ☐ 75-100%

d) allergy symptoms? (pollen)

☐ 0-15% ☐ 15-25% ☐ 25-50% ☐ 50-75% ☐ 75-100%

e) vocal abuse? (noise)

☐ 0-15% ☐ 15-25% ☐ 25-50% ☐ 50-75% ☐ 75-100%

11) How many of the environmental complaints of dysphonia have concurrent chronic cough?

☐ 0-15% ☐ 15-25% ☐ 25-50% ☐ 50-75% ☐ 75-100%

12) In your county, which order of prominence does your patient population find themselves employed in these professional settings?

- ☐ Agricultural, Farm Labor or business related (outdoor exposure)
- ☐ Automotive, Trucking, Mechanical, or Highway related
- ☐ Industrial manufacturing district related
- ☐ Office Work, Educational, Medical Office, Business Office related
- ☐ State, Federal. Local, Government Agency related

13) How often do you believe that side effects from medications worsen the symptoms of dysphonia?

- ☐ almost never ☐ rarely ☐ sometimes ☐ regularly ☐ often

14) Geographical environment related complaints during unhealthy air quality occur mostly during

- ☐ September-November ☐ December-February ☐ March-May ☐ June-August

15) What portion of your voice patients would avoid environmental exposure and benefit from etherapy via an internet webcam?

- ☐ 0-15% ☐ 15-25% ☐ 25-50% ☐ 50-75% ☐ 75-100%