Semi-occluded vocal tract exercises and their effectiveness in treating dysphonia

Bryce Baker, BS
Dr. Amanda Eaton, Ph.D., MS-SLP, CCC

Abstract

This session will overview the definition and effectiveness of semi-occluded vocal tract (SOVT) exercises in individuals with muscle tension dysphonia (Meerschman et al., 2019). Semi-occluded vocal tract exercises will be summarized, and their efficacy reviewed. SOVT exercises will be reviewed. (Kapsner-Smith, M. R., et al., 2015).

Learner Outcomes

1. Define and explain what semi-occluded vocal tract exercises are
2. Distinguish the efficacy of SOVT exercises (Kapsner-Smith, M. R., et al., 2015)
3. Understand the vocal measures to assess vocal quality and function: vocal handicap index (VHI), Dysphonia Severity Index (DSI), and Acoustic Voice Quality Index (AVQI)

Semi-Occluded Vocal Tract Techniques

Lip Trill (LT): a form of semi-occluded vocal tract exercise demonstrated solely using the articulators. The articulators create intraoral pressure while producing a labial fricative consonant. Air can escape slowly while phonation is activated to naturally create resistance.

Straw Phonation (SP): a form of semi-occluded vocal tract exercise that utilizes a straw or tube to increase subglottic pressure and ease secondary symptoms to dysphonia. Straw phonation is a cost-effective, easy therapeutic approach that is easily practiced by subjects in the home setting (Titze, I. R., 2006)

Water-resistance therapy (WRT): Like straw phonation, this SOVT uses a straw to create intraoral pressure, however, the distal end of the straw is submerged into water to increase resistance and create a “densing effect” on the glottic. (Guzmán, M., et al., 2016)

What is Muscle Tension Dysphonia?

Muscle Tension Dysphonia: muscle tension dysphonia (MTD) is the change in voice quality, pitch, loudness, flexibility and/or stamina. Primary MTD the absence of any identified structural, systemic, or neurological deficits within any of the three voice subsystems of respiration, phonation, and resonance. Secondary MTD can originate secondary to a primary organic etiology (Watts, C. R., et al., 2019)

Measures for Assessing Voice

Voice Handicap Index (VHI): a question-and-answer tool to subjectively assess the amount of handicap a voice disorder is causing. This self-assessment is set on a five-point scale and each question falls within one of three categories- functional, physical, and emotional (Sovani, P., et al., 2010)

Acoustic Voice Quality Index (AVQI): an objective multiparametric approach to quantify dysphonia severity based on both a sustained vowel and continuous speech (Meerschman et al., 2019)

Dysphonia Severity Index (DSI): The DSI is a multiparametric approach designed to establish an objective and quantitative correlate of the perceived vocal quality (Meerschman et al., 2019)

Efficacy of SOVT

Regarding the study by Meerschman et al., specific methods of SOVT with significant outcomes of change included lip trills (p=0.002) and WRT (p=0.001) on the VHI. Straw phonation(p=0.031) and lip trill (p=0.042) effectively improved scores on the DSI.

RVT and SP were equally effective in significantly effecting AVQI scores (p=0.001) (Watts, C. R., et al., 2019).

Conclusion

SOVT was proven to be an affordable and effective therapy for muscle tension dysphonia in comparison to traditional resonant voice therapy (RVT) based on the outcome of changes in VHI, DSI and AVQI scores. SOVT is an effective complimentary program that can be used in conjunction with traditional RVT to improve efficacy of treatment.

Resources

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