

Qualitative Analysis of Speech-Language Pathologists’ Voice Evaluation Practices and Perspectives



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BACKGROUND

- 25% of voice-specializing speech-language pathologists (SLPs) report that vocal effort is the most common complaint in clinic^a
- Vocal effort is perceived by listeners as vocal strain, but trained listeners often disagree when judging this quality^{b,c}
- Acoustic measures are recommended to supplement perceptual measures in a voice evaluation
- However, not all voice SLPs use acoustic assessment in their clinical practice and there is no consensus on an acoustic estimate of effort or strain
- **PURPOSE:**
 - a) To examine the general structure of voice evaluations across clinicians
 - b) To identify the barriers and benefits to using acoustic measures
 - c) To investigate how clinicians measure strain and vocal effort

METHOD

- N =15 voice-specializing SLPs from voice centers in the U.S. interviewed about current voice evaluation practice patterns
 - Perceived barriers and benefits to using acoustic measures
 - Methods for evaluating vocal effort and strain
- **Thematic analysis** performed by two researchers (M.D.M., K.F.N.) based on recorded qualitative interviews

SUMMARY RESULTS

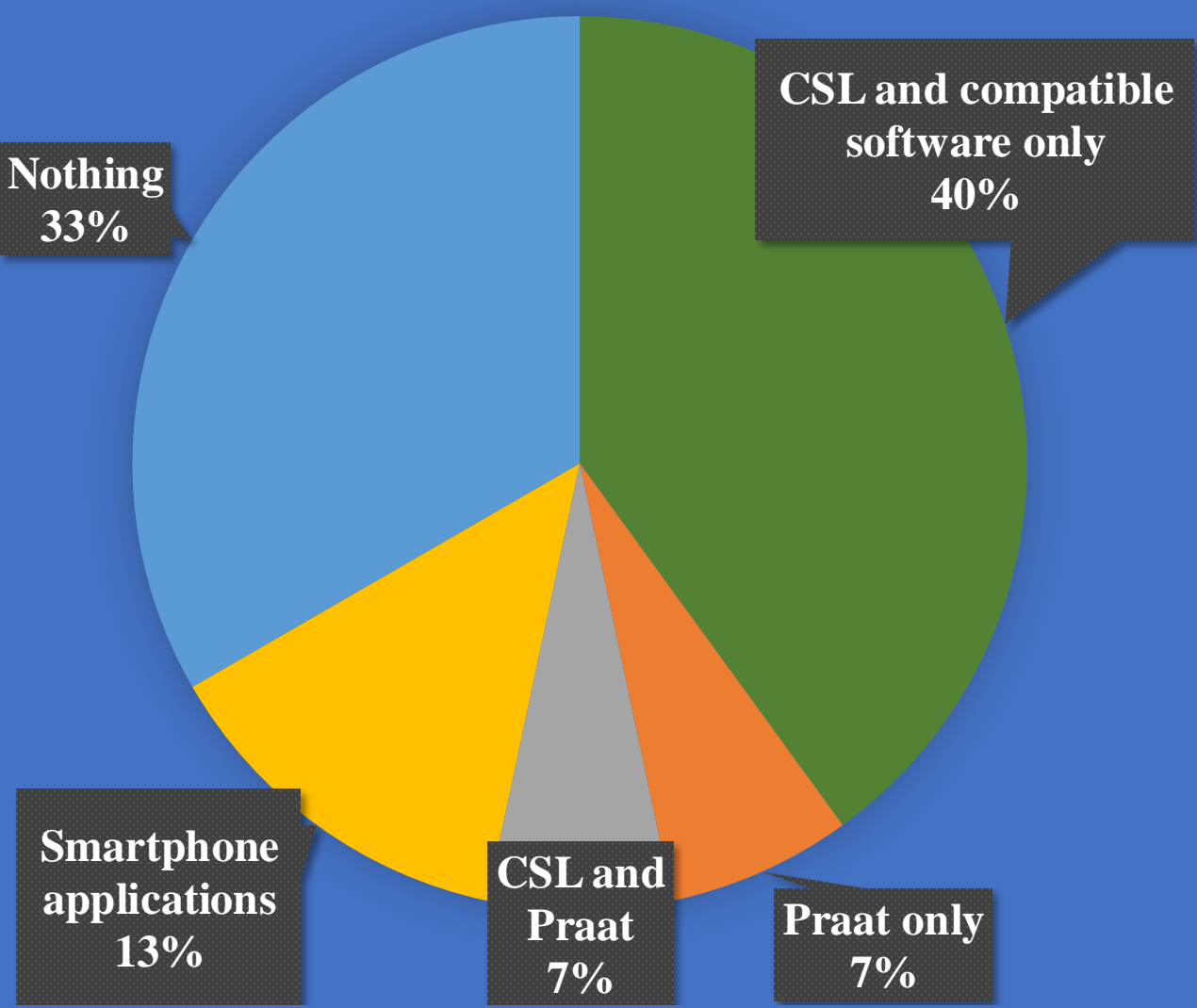


Fig 1. Acoustic Software Used by Clinicians

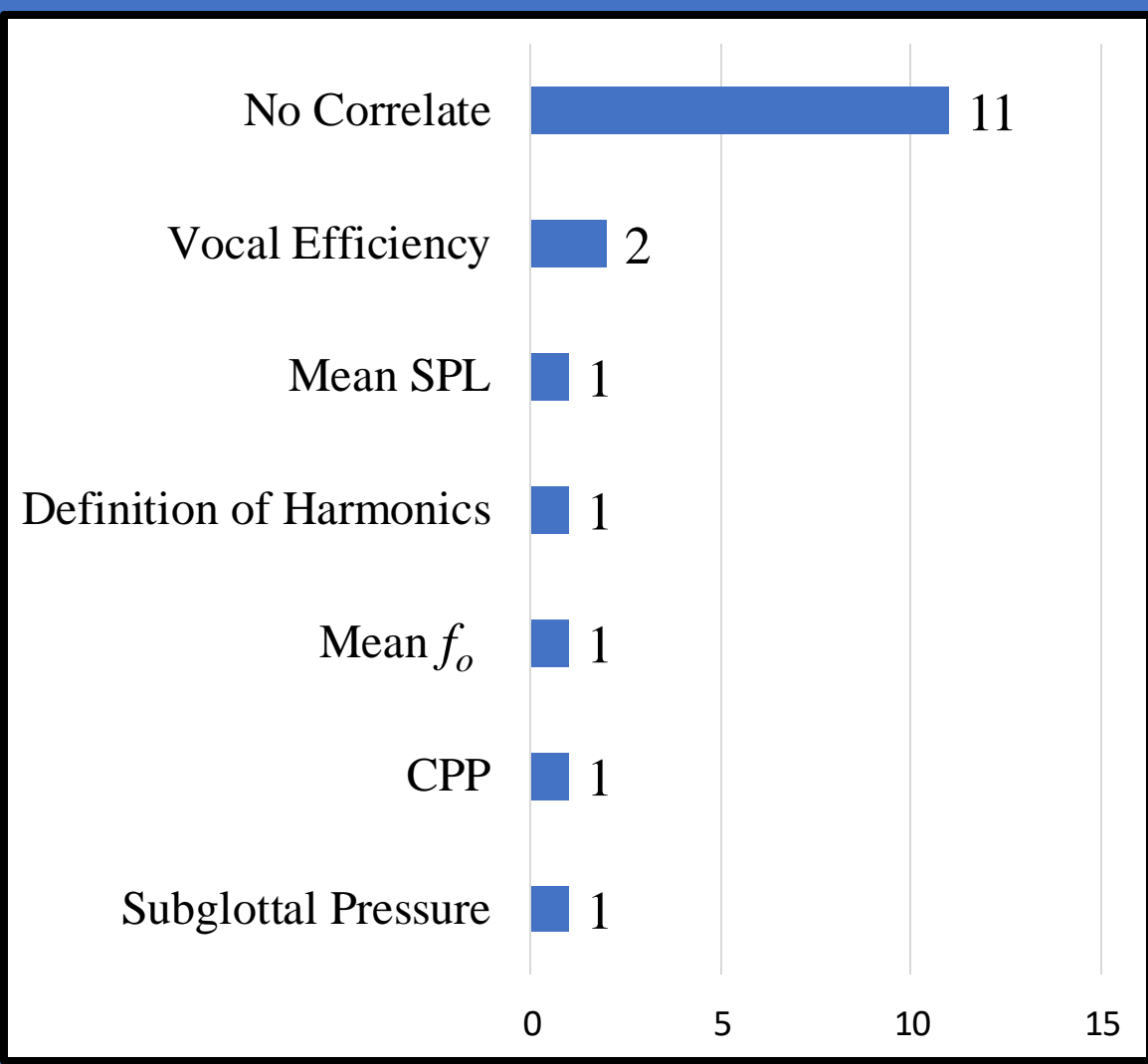


Fig 2. Reported Objective Assessment of Strain

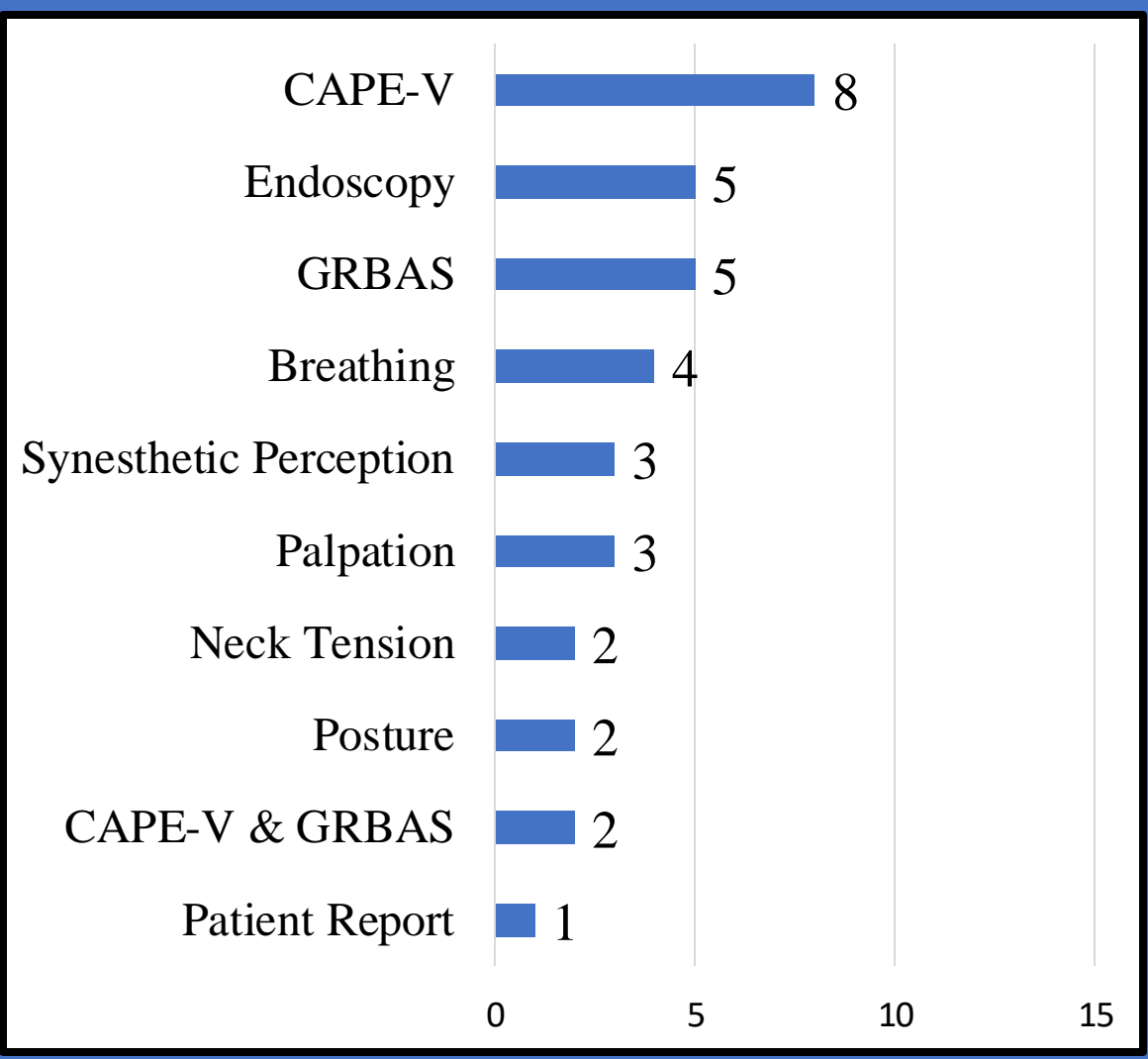


Fig 3. Reported Perceptual Assessment of Strain

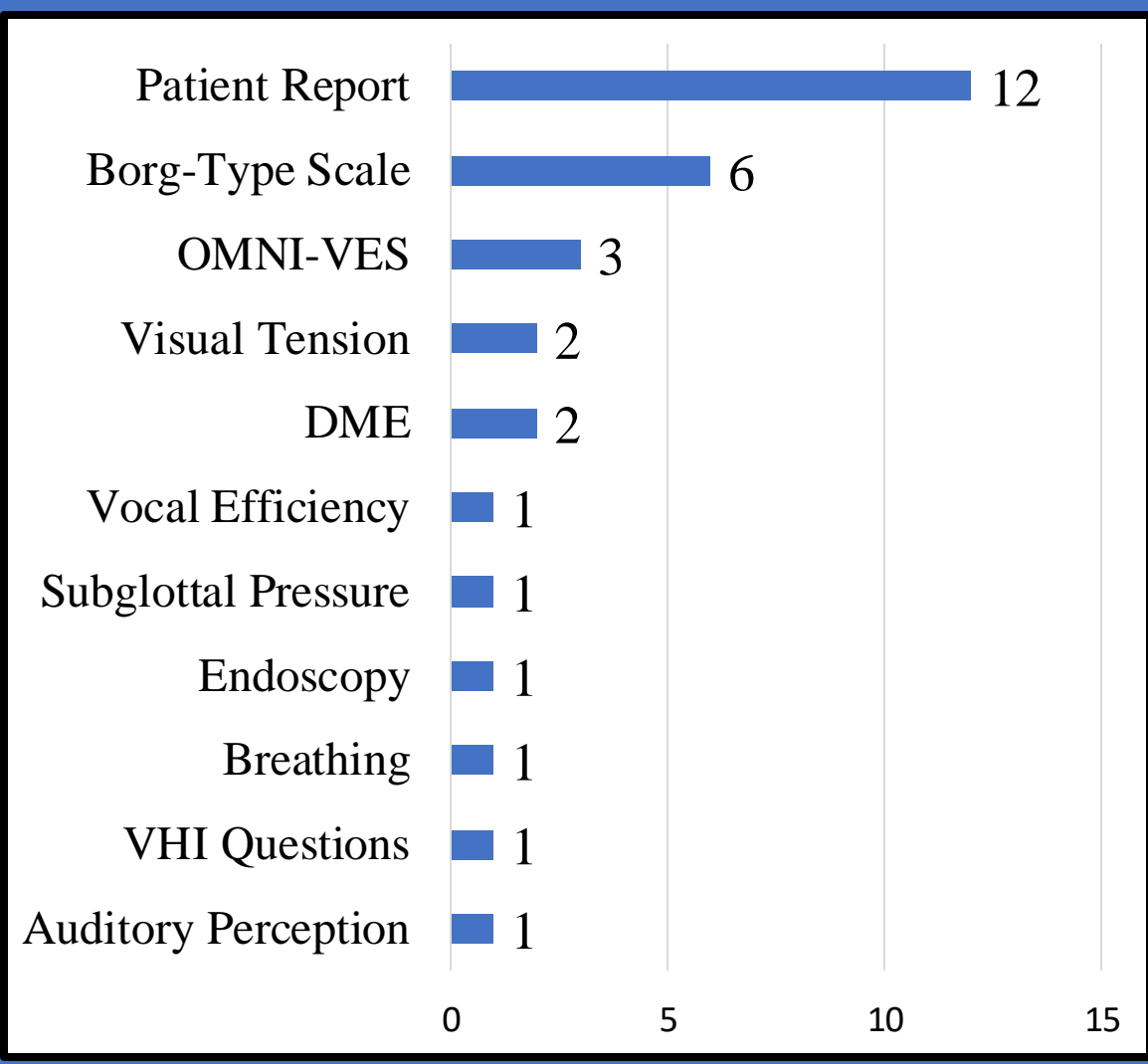


Fig 4. Reported Assessment of Vocal Effort

RESULTS OF THEMATIC ANALYSIS

What barriers and benefits do you see to collecting acoustic measurements as part of your voice evaluation process?

Barriers

Acoustic measures take time

- “If I’m seeing, let’s say 10 patients in a day, that’s let’s say [adding] 10 minutes [each], that’s an extra 100 minutes added on to my day just to do this.”
- “Some patients at the end of the day were like, ‘Why are we doing this? This is taking too long. I just want to know [if] I have laryngeal cancer or not.’”

Acoustic measures do not inform therapy patterns

- “When someone is sitting and they know that they’re being recorded, they are not using their voice in the way that they use it every single day when they’re talking to someone, so I think you’re getting a skewed assessment of their actual voice function.”
- “I already knew they were dysphonic when they opened their mouth, I don’t need a number to tell me that.”

Benefits

Acoustic measures allow for the most accurate comparison

- “If you go a couple weeks between seeing someone it’s hard to really remember how different do they sound from the last time I saw them.”
- “CPP is very nice for showing any changes in the signal part of the recording so that if their voice was super noisy to begin with you can show either the richness of the harmonics that have changed or the signal proportion compared to background noise.”

Acoustic measures supplement patient-centered care

- “I think that it’s beneficial for patients to know, ‘Okay, this is within normal limits; you’re OK,’ and saying that to them and validating what’s going on.”
- “It’s great for just illustrating to the patient ‘look you’re in the red, that’s abnormal; ‘hey look now post-therapy you’re in the green. Look how good you’ve done’ and so it’s really great for patient understanding of progress.”

How do you evaluate vocal effort and strain using perceptual measures or quantitative measures if any?

Clinicians lack consensus on objective measures of strain

- “Then with the spectrogram too, you know, we can see the definition of those harmonics and the tracing of the harmonics. That may be translated as strain for a very healthy voice.”
- “I’m looking primarily to subglottal pressure measures, that ratio-based measure of phonatory efficiency.”

Clinicians use more than auditory perceptions to assess strain

- “I will look for patterns of phonatory hyperfunction, whether that’s anterior-posterior, sphincteric, lateral, or... splinting.”
- “I feel my mirror neurons kick in...as I’m listening to somebody, my muscles start to like shift...it almost seems to take the shape of what it thinks the other person is doing.”

Clinicians assess vocal effort in different ways

- **Patient Report:** “I ask them to describe examples... ‘Is this like picking up a 10-pound weight, is this like picking up a 50-pound weight, like if you had to give the analogy.’”
- **Correlates:** “I’m looking at visible tension...that appears to onset at the time voice onsets.”

DISCUSSION AND CONCLUSION

- ASHA has published guidelines for voice assessment,^d but few have investigated everyday evaluation practices
- Many SLPs collect acoustic data according to ASHA guidelines, but the software, type of measures, and number of measures to generate outcomes are variable
- For some SLPs, acoustic assessment is a gold-standard practice; for others, it is unnecessary for high-quality voice therapy
- Although the need for standardized assessment of vocal effort is well documented,^a the lack of consensus on how to quantify it necessitates further discussion

ACKNOWLEDGMENTS & REFERENCES

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