

EASE and SVHI -10 Differences in Scores Among Undergraduate Opera Singers

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ABSTRACT

The Singing Voice Handicap Index - 10 (SVHI-10) is a patient-reported outcome measure that is used to assess singing voice handicap. The SVHI-10 possesses an interpretive framework — validation, norms, an abnormality benchmark, and a minimally clinically important difference (MCID). The Evaluation of the Ability to Sing Easily (EASE) assesses a singer's perceived ability to sing easily. The EASE includes two 10-item subscales, vocal fatigue (VF) and pathologic risk indicators (PRI), with good internal consistency subscale scores for benchmarks, but no established threshold for positive screening of singers with a singing voice handicap. By correlating monthly EASE and SVHI-10 scores within undergraduate opera singers and referencing EASE values against the SVHI-10's ≥ 20 benchmark, this study takes a first step toward an EASE-based criterion for screening for dysphonia among singers.

INTRODUCTION

Patient-reported outcome measures (PROMs) for voice were first standardized for the general dysphonic population with the Voice Handicap Index and its abbreviated form, the VHI-10 [1]. However, clinical use of the VHI-10 with singers revealed that information specific to singing voice was not obtainable, prompting the development of singer-specific instruments: the Singing Voice Handicap Index and its abbreviated form, the SVHI-10 [2,3]. A separate instrument was developed specifically to quantify singer's perception of the status of the singing voice under vocal load was made: the Evaluation of the Ability to Sing Easily (EASE) [4].

Although both a singer-specific PROMs, the SVHI-10 and the EASE were built to capture different constructs. The SVHI-10 asks the singer to appraise handicap — the accumulated retrospective impact of a singing voice problem on vocal function and quality of life. By contrast, the EASE asks the singer to characterize present-moment vocal symptoms and was intentionally worded so that it does not imply that a voice problem exists. The EASE includes two 10-item subscales, vocal fatigue (VF) and pathologic risk indicators (PRI), with good internal consistency and subscale scores for benchmarks, but no established threshold for positive screening of singers with a singing voice handicap [5].

HYPOTHESIS

- Though these measure separate constructs, EASE and SVHI-10 will correlate.
- EASE PRI subscales could interact with SVHI-10 benchmark scores, indicating at which point the EASE is a useful tool for screening singers with dysphonia.

OBJECTIVES

- To validate the EASE as an effective preventative screener for vocal fatigue in healthy singers.
- To set an EASE-based criterion to screen for dysphonia among healthy singers.
- To promote vocal health and educate singers on the importance of care of the professional voice.

MATERIALS & METHODS

Participants: 18 undergraduate student singers (13 female, 4 male, 1 transmasculine) were enrolled in the study. Participant ages ranged from 18 to 22 years ($M=20.4$, $SD = 1.1$). All participants were enrolled in applied voice lessons at the Hurley School of Music or in Opera Centenary. The study was run from February to May of 2026

SVHI-10: 10 items rated 0-4 summed (range 0-40; higher = greater handicap).

EASE: 22 items rated on a 4-point scale and rescored 0-3, with 3 positively worded items reverse-scored.

Procedure: Questionnaires were administered digitally via Google Forms at each session. Participants self-entered an assigned participant number, which served as the sole linkage key across sessions; no identifying information was collected.

Statistical Analysis: The primary analysis estimated within-singer associations between the SVHI-10 and the EASE total and subscales using repeated-measures correlation (rmcorr) [6]. Ninety-five percent confidence intervals were obtained via the Fisher r -to- z transformation. The primary analysis set comprised all 35 study observations. The PRI and VF associations with the SVHI-10 were contrasted using Williams's test for dependent correlations. Subscale distributions were displayed per session by SVHI-10 benchmark group (< 20 vs. ≥ 20) as box plots with individual observations overlaid. Analyses used a two-tailed α of .05 and were conducted in R [7,8].

RESULTS

EASE and SVHI-10 scores positively correlate.

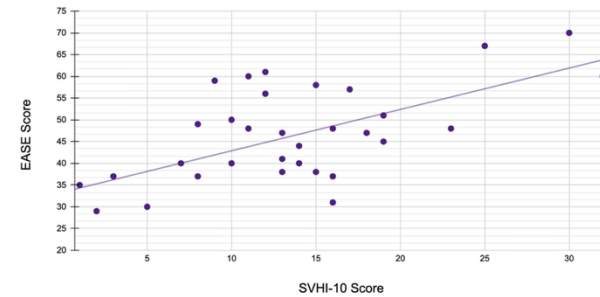


Figure 1. EASE and SVHI-10 Score Correlation. SVHI-10 scores (x-axis) were plotted against corresponding EASE scores (y-axis). Each data point ($n = 35$) represents an observation. A trendline was calculated ($y = 0.95x + 33.4$).

EASE VF and PRI subscales positively correlate SVHI-10 scores ≥ 20 .

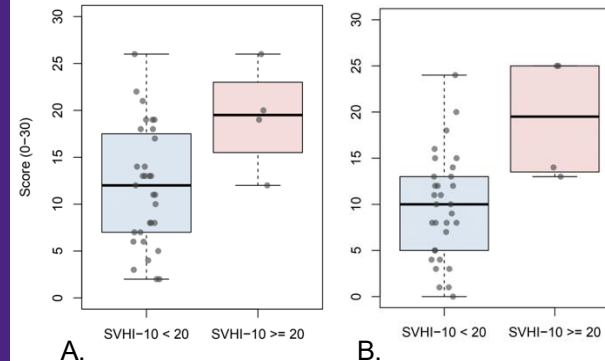


Figure 2. EASE subscale correlations to SVHI-10. A. Vocal Fatigue Subscale. B. Pathologic Risk Indicators Subscale.

EASE scores across study sessions varied in individual singers.

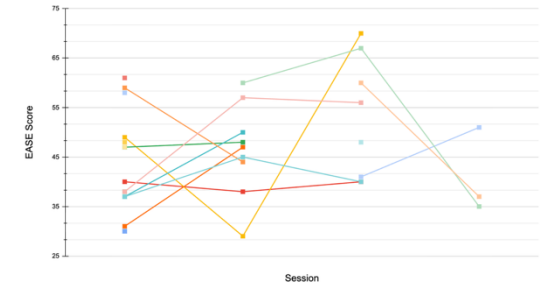


Figure 3. EASE score variation over the semester. Each color represents 1 of the 18 participants.

CONCLUSIONS

Our findings support our hypothesis that there is a positive correlation between EASE and SVHI-10 scores. This moderately positive correlation ($r = 0.616$) between these two self-reported surveys supports convergent validity for the EASE. EASE scores varied considerably within a single participant across the semester. This finding supports the claim that EASE assesses vocal function at a single point in time rather than over time. Lastly, high EASE subscales for vocal fatigue and pathologic risk indicators were both observed in participants who also had an SVHI-10 ≥ 20 . As an SVHI-10 ≥ 20 suggests an abnormal result, this observation may point to the EASE's ability to predict vocal fatigue and indicate pathologic risk.

REFERENCES

- Rosen, C. A., Lee, A. S., Osborne, J., Zullo, T., & Murry, T. (2004). Development and validation of the Voice Handicap Index-10. *The Laryngoscope*, 114, 1549-1556.
- Cohen, S. M., Jacobson, B. H., Garrett, C. G., Noordsy, J. P., Stewart, M. G., Ati, A., Ossoff, R. H., & Cleveland, T. F. (2007). Creation and validation of the Singing Voice Handicap Index. *Annals of Otolaryngology & Laryngology*, 116(6), 402-406.
- Cohen, S. M., Stitham, M., Rosen, C. A., & Zullo, T. (2009). Development and validation of the Singing Voice Handicap-10. *The Laryngoscope*, 119(9), 1864-1869.
- Phyland, D. J., Pellan, J. P., Berninger, M. S., Thibault, S. L., Greenwood, K. M., Smith, J. A., & Vallance, N. (2013). Development and preliminary validation of the EASE-A tool to measure perceived singing voice function. *Journal of Voice*, 27(4), 454-462.
- Gochman, G. E., Young, V. N., & Schneider, S. L. (2025). Prospective determination of normative values of the Singing Voice Handicap Index-10 (SVHI-10). *Journal of Voice*, 39(4), 1114-1117.
- R Core Team. (2026). *R: A language and environment for statistical computing* (Versi on 4.6.1). R Foundation for Statistical Computing, Vienna, Austria.
- Anthropic. (2026). *Claude* [Large language model]. Anthropic.