The Singing Voice Handicap Index-10 (SVHI-10): A Systematic Review

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Abstract: To systematically synthesize the literature on the Singing Voice Handicap Index-10 (SVHI-10), a concise patient-reported outcome measure designed specifically for singers, this study followed PRISMA 2020 guidelines. Databases including PubMed, Scopus, Web of Science, and Embase were searched from inception to March 2026. Peer-reviewed studies reporting development, validation, reliability, validity, normative values, minimal clinically important difference (MCID), or clinical applications were included. Quality was assessed using the COSMIN checklist. Of 152 records screened, 22 studies were included. The original SVHI and abbreviated SVHI-10 showed excellent psychometrics (Cronbach's $\alpha \geq 0.94$). Validated adaptations exist in at least eight languages, including Mandarin, Italian, Turkish, Kannada, Persian, and Hindi. Normative data yielded pooled means of 8.38–9.13 in healthy singers, with scores ≥20 considered abnormal. The MCID was established as 9.5–10 points. The SVHI-10 demonstrates superior singer-specific sensitivity and responsiveness compared with the VHI-10. The SVHI-10 is a reliable, valid, and clinically actionable PROM. Its Mandarin version (MSVHI-10) is particularly relevant for Chinese populations. Future research should focus on longitudinal responsiveness and non-Western singing styles.

Keywords: Singing Voice Handicap Index-10; SVHI-10; Voice Disorder; Singers; Patient-reported Outcome Measure; Psychometrics; Normative Data; MCID

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1 Introduction

Voice disorders significantly impair quality of life for professional and amateur singers. While the Voice Handicap Index-10 (VHI-10) is widely used, it lacks sensitivity to singing-specific demands such as pitch accuracy, vocal endurance, and performance anxiety. The full Singing Voice Handicap Index (SVHI, 36 items) was developed to address this; however, its length limits clinical utility. In 2007, Cohen et al. introduced the original SVHI, [1] followed by the abbreviated SVHI-10 in 2009 [2] through rigorous item reduction, offering a concise yet comprehensive tool.

Over the past 18 years, the SVHI-10 has undergone extensive validation, cross-cultural adaptation, normative benchmarking, and clinical application. Previous reviews focused mainly on the full SVHI, yet no comprehensive synthesis exists exclusively for the SVHI-10. This review fills that gap, with particular emphasis on relevance to Chinese singing populations and implications for voice research centers worldwide.

2 Methods

This systematic review adhered to PRISMA 2020 guidelines. The protocol was registered prospectively.

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2.1 Search Strategy

Comprehensive searches were conducted in PubMed, Scopus, Web of Science, and Embase up to March 17, 2026. Search terms combined "Singing Voice Handicap Index-10," "SVHI-10," "MSVHI-10," and synonyms with Boolean operators. Reference lists and forward citations were hand-searched. No language restrictions were applied.

2.2 Inclusion/Exclusion Criteria

Included: peer-reviewed original research or meta-analyses on SVHI-10 development, psychometrics, normative data, MCID, or clinical use in singers. Excluded: reviews, abstracts, non-singer populations, or studies using only the full SVHI without SVHI-10 data.

2.3 Study Selection and Data Extraction

Two independent reviewers screened titles/abstracts and full texts. Disagreements were resolved by consensus. Extracted data included study design, population, psychometric metrics, normative values, MCID, and clinical outcomes. Risk of bias was assessed using the COSMIN checklist for PROM studies.

2.4 Synthesis

Narrative synthesis with tabular summary due to heterogeneity.

3 Result

3.1 Study Selection

152 records were identified; after duplicate removal and screening, 22 studies were included.

Table 1 Key Studies on SVHI/SVHI-10 Development, Validation, and Psychometrics

Study	Year	Version	Population (n)	Key Psychometrics	Main Findings
Cohen et al.	2007	Full SVHI (36 items)	112 dysphonic + 129 healthy	α = 0.97; test-retest r = 0.92	First singer-specific instrument; single-factor 51.5% variance
Cohen et al.	2009	SVHI-10	Same cohorts	α = 0.94; test-retest r = 0.86	Abbreviated version with retained sensitivity
Ghaemi et al.	2019	Persian full SVHI	115 singers (48 dysphonic)	α = 0.78; ICC = 0.95; large effect size	High responsiveness to therapy
Castelblanco et al.	2014	Full SVHI	47 healthy professionals	Mean 22.45/144; no correlation with stroboscopy	Self-perception vs pathology dissociation
Aydinli et al.	2019	Turkish SVHI-10	200 singers (64 dysphonic)	α = 0.91; AUC = 0.95; cut-off 11.5	Excellent diagnostic accuracy
Sobol et al.	2019	SVHI-10 meta-analysis	528 healthy singers	Pooled mean 8.38 (95% CI 7.43–9.34)	Robust normative benchmark
Nacci et al.	2023	Italian SVHI-10	Italian singers	α > 0.90; strong validity	European validation
Gunjawate et al.	2019	Kannada SVHI-10	Indian classical singers	α = 0.92; cut-off ≈20	Non-Western adaptation
Fu et al.	2025	Mandarin MSVHI-10	Chinese singers	α = 0.96; AUC = 0.97; cut-off 21.5	Excellent for Greater China
Gochman et al.	2025	SVHI-10 normative	149 diverse singers	Mean 9.13; ≥20 abnormal	Prospective normative data
Perrin et al.	2025	SVHI-10 MCID	103 singers	MCID = 9.5–10 points	Prospective MCID determination
Renk et al.	2017	SVHI-10 vs VHI-10	Singers with dysphonia	SVHI-10 significantly higher	Superior singer-specific sensitivity

3.2 Development and Initial Validation

The foundation for singer-specific voice assessment was laid by Cohen and colleagues in 2007 with the creation of the original Singing Voice Handicap Index (SVHI) [1]. Starting from an initial pool of 81 items derived from singer-reported symptoms, clinical input from laryngologists, speech-language pathologists, and vocal pedagogues, the authors applied rigorous item-reduction techniques. Items with item-total correlations below 0.6 were eliminated, along with redundant or low-frequency items, resulting in a final 36-item instrument. Each item is scored on a 5-point Likert scale (0 = never to 4 = always), yielding raw

scores of 0–144 (scaled to 0–100 for interpretation).

In the validation cohort of 112 dysphonic singers (mean age 35.3 years; mixed professional/amateur status across classical, country, rock, choral, gospel, and pop styles) and 129 healthy control singers, the SVHI demonstrated exceptional psychometric properties: internal consistency (Cronbach $\alpha = 0.97$), high test-retest reliability (Spearman $r = 0.92$, $p < .001$), and strong construct validity (correlation with self-rated visual analog scale severity: $r = 0.63$, $p < .001$). Discriminant validity was robust, with dysphonic singers scoring markedly higher (median 61) than healthy controls (median 22; $p \leq .001$, rank-sum test), even after subgroup stratification by professional status, income source, and singing genre. Principal component analysis confirmed a single-factor structure explaining 51.5% of variance.

Recognizing the clinical burden of the 36-item version, Cohen et al. [2] performed item reduction using principal component analysis, item-total correlations, and expert consensus. The resulting SVHI-10 retained core domains while preserving excellent integrity: $\alpha = 0.94$, test-retest $r = 0.86$, correlation with VHI-10 $r \approx 0.7$. Subsequent validations (e.g., Turkish, Italian, Kannada, Mandarin) confirmed robustness across cultures.

3.3 Cross-Cultural Adaptations and Validations (n=7)

Validated versions exist in Mandarin [9], Italian [3], Turkish [7], Kannada [4], Persian [5], and Hindi [13]. All demonstrated high internal consistency ($\alpha \geq 0.90$) and test-retest reliability (>0.85). The Mandarin MSVHI-10 showed strong correlation with VHI-10 ($r = 0.54$–0.72) and excellent discriminatory ability (AUC = 0.97; cut-off: 21.5).

3.4 Normative Data (n=3)

Sobol et al. [8] meta-analysis of 528 healthy singers reported pooled mean 8.38 (95% CI 7.43–9.34). Gochman et al. [10] in 149 diverse singers yielded mean 9.13 (SD 5.15); abnormality defined as ≥20.

3.5 Minimal Clinically Important Difference (n=1)

Perrin et al. [11] prospectively determined MCID as 9.5–10 points (AUC = 0.700).

3.6 Comparative and Clinical Utility Studies (n=10)

Renk et al. [12] showed SVHI-10 scores significantly higher than VHI-10 ($P < 0.0001$), confirming domain specificity. Multiple studies demonstrated significant pre-/post-treatment reductions exceeding MCID.

4 Discussion

The SVHI-10 has emerged as a reliable, valid, and clinically practical patient-reported outcome measure (PROM) specifically tailored to the unique vocal demands of singers. This systematic review synthesizes nearly two decades of evidence, confirming that the instrument maintains excellent psychometric properties across diverse populations, singing styles, and cultural contexts while offering substantial advantages over generic tools such as the VHI-10. [12]

The foundational work by Cohen and colleagues (2007) established the conceptual and methodological groundwork for singer-specific voice assessment [1]. Through systematic item reduction from 81 candidate items to the final 36-item SVHI, they achieved outstanding internal consistency (Cronbach $\alpha = 0.97$) and strong discriminant validity. The subsequent development of the SVHI-10 [2] successfully preserved these strengths in a more concise format ($\alpha = 0.94$), significantly reducing respondent burden without compromising sensitivity. [2] Subsequent cross-cultural adaptations—including Turkish, [7] Italian, [3] Kannada, [4] Mandarin (MSVHI-10), [9] Persian, [14] Hindi, [13] Polish, [16] Quebec French, [15] German, [18] Spanish, [19] Korean, [20] and Portuguese [21]—consistently demonstrated high reliability ($\alpha \geq 0.90$) and diagnostic accuracy (AUC often > 0.95), supporting its universal applicability.

Normative data further strengthen clinical interpretability. The meta-analysis by Sobol et al. [8] provided a robust pooled mean of 8.38 (95% CI 7.43–9.34) across 528 healthy singers of varied genres and training levels. More recent prospective work by Gochman et al. [10] corroborated these findings with a mean score of 9.13 in 149 diverse singers, proposing a clinical cut-off of ≥20 for abnormality. These benchmarks, combined with the prospectively established minimal clinically important difference (MCID) of 9.5–10 points (Perrin et al. [11]), enable clinicians to make evidence-based decisions regarding treat-

ment initiation, progress monitoring, and outcome evaluation.

A particularly important finding is the superior singer-specific sensitivity of the SVHI-10 compared with the VHI-10. Renk et al. [12] demonstrated that singers consistently report greater handicap on the SVHI-10 than on the VHI-10 ($P < 0.0001$), confirming that generic instruments systematically underestimate singing-related disability. This domain specificity is further supported by Castelblanco et al. [6], who observed frequent subclinical laryngeal abnormalities on videostrobolaryngoscopy in ostensibly healthy professional singers, yet these findings showed no significant correlation with SVHI scores ($P = 0.96$). Such dissociation underscores the complementary value of combining subjective PROMs with objective imaging and acoustic analysis in comprehensive voice care.

From a global perspective, the availability of validated versions in at least eight languages, including non-Western adaptations, represents a major advancement. The Mandarin MSVHI-10 [9] is of special relevance to China, given the country's rich and diverse singing traditions. Its excellent psychometric performance ($\alpha = 0.96$, AUC = 0.97) positions it as a valuable tool for both clinical practice and research in Chinese voice centers. Systematic reviews such as Gorges et al. [17] further reinforce its value across research and clinical contexts.

Clinically, the SVHI-10 has proven responsive to interventions, with multiple studies showing significant pre- to post-treatment score reductions that exceed the established MCID. Its brevity makes it particularly suitable for routine screening, longitudinal monitoring, and integration into electronic health records or mobile applications.

Nevertheless, several limitations warrant consideration. Heterogeneity in singing genres, professional status, and diagnostic criteria across studies complicates direct comparisons. Most validation studies have focused on classical or Western-trained singers, with relatively fewer data on traditional or non-Western styles common in Asia. Publication bias toward positive validation results cannot be entirely ruled out. Additionally, while responsiveness data are promising, large-scale longitudinal studies are still needed.

5 Conclusion

The SVHI-10 is a reliable, valid, and clinically actionable tool. Its adoption, including MSVHI-10, should be encouraged worldwide—particularly in China's rich singing culture. This review provides a comprehensive evidence base to guide implementation.

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