

## INTRODUCTION

Dysphonia (hoarseness) is characterized by altered vocal quality, pitch, loudness, or effort that impairs communication or reduces quality of life.<sup>1</sup> Approximately 29% of people are affected in their lifetime.<sup>2</sup> Voice therapy (VT) is an essential tool in the management of many voice disorders,<sup>3</sup> with outcomes highly dependent on compliance. Despite this, 65% of patients fail to complete therapy.<sup>4</sup> Understanding patient motivations could provide insight into reasons for non-compliance. The Voice Handicap Index (VHI) and VHI-10 are validated quality of life indices for patients with dysphonia.<sup>5</sup> In this study, we examine the a cohort of patients in an attempt to identify potential markers for therapy adherence.

## RESULTS

- Of the 489 patients referred for VT, 36.2% did not attend, 36.0% partially completed VT, and 27.8% fully completed VT.
- Those electing to not attend VT were older. Otherwise, there were no significant differences between groups regarding demographics or etiology of dysphonia. (**Figure 1**)
- Patients who fully or partially completed VT were more likely to use their voice for work (p=0.015).
- Patients who did not attend VT had:
  - 1) Significantly lower total VH/VHI-10 scores. (**Table 1**)
  - 2) Significantly lower score on six specific VHI questions. (**Table 2**)
- Patient responses for the partially completed and completed groups were similar at time of evaluation and at follow-up. (**Table 2**)

	Did not attend	Partially completed (initial)	Partially completed (final)	Completed (initial)	Completed (final)
<b>VHI-Total</b>	43.7±28.3	55.7±29.1	49.7±33.4	53.0±24.8	36.2±26.1
<b>VHI-10</b>	17.1±9.8	20.5±9.6	17.6±11.0	20.7±8.6	14.1±9.8
<b>VHI-Functional</b>	14.2±10.8	17.9±11.4	16.1±10.8	17.4±10.2	13.3±10.5
<b>VHI-Physical</b>	18.8±10.1	22.6±9.4	19.5±11.9	21.9±8.8	15.3±9.9
<b>VHI-Emotional</b>	11.2±10.4	14.9±11.1	14.6±12.4	14.1±9.8	9.2±9.3

**Table 1.** Comparison of VHI, VHI-10 and subdomain scores between treatment groups. Pre- (initial) and post- treatment (final) scores are included for patients that participated in therapy

## DISCUSSION

- Several studies have attempted to identify barriers to patient participation in voice therapy.
  - Financial and logistical issues have been correlated to a higher risk of drop-out.<sup>6</sup>
  - Previous studies were unable to demonstrate a correlation between VHI and drop-out.<sup>4</sup>
- In this study, patients who did not attend therapy had lower VHI scores.
  - Those who did not enroll in VT may not perceive their impairment to be sufficient to motivate them to participate therapy.
  - Only three of the individual questions that correlated with therapy compliance are included in the VHI-10. This may affect the sensitivity of outcomes measures if the VHI-10 is used instead of the long-form VHI, and could potentially explain negative results of previous studies.

## CONCLUSIONS

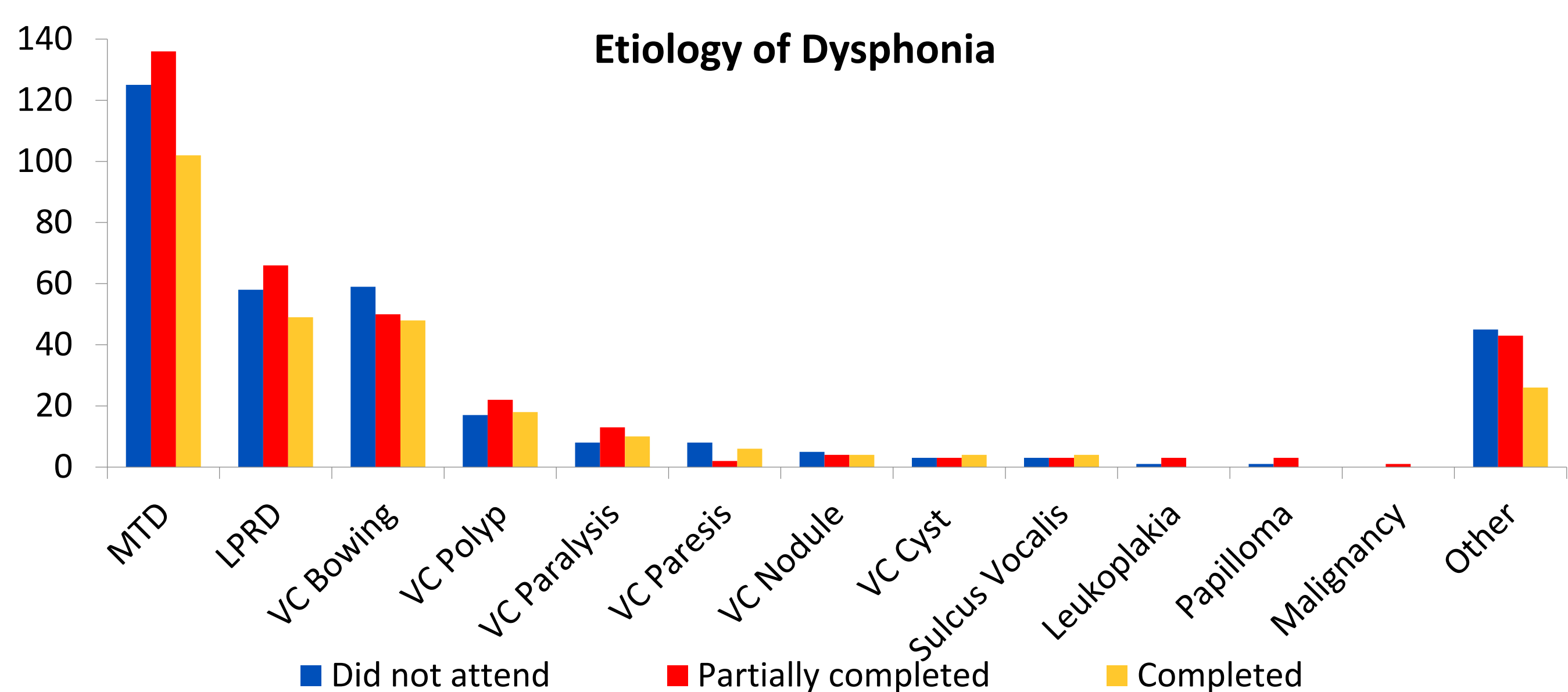
Understanding occupational voice requirements, as well as specific responses and trends in the VHI/VHI-10 may help providers identify which patients are more likely to attend or complete therapy. The VHI is one tool that can enhance provider understanding of patient motivations to attend/complete VT. This has the potential to improve resource utilization, voice rehabilitation, and patient satisfaction.

## REFERENCES

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## METHODS

- Single institution retrospective cohort study from January 2011 to June 2016.
- All patients had a chief complaint of dysphonia and were referred for voice therapy.
- Data collected included survey data, demographic information, diagnosis, social history, and exam findings.
- Patients were divided into three cohorts: 1) did not attend VT, 2) partially completed VT, or 3) completed VT.
- Chi-squared tests, Kruskal Wallis tests, and Mann Whitney U tests were used to compare demographic, clinical, and VHI data between groups.



**Figure 1.** Distribution of etiologies of dysphonia for all patients included in the study. MTD – Muscle Tension Dysphonia, LPRD – Laryngopharyngeal Reflux Disease, VC – Vocal Cord

	VHI Question Item	p	N
<b>P5</b>	I feel as though I have to strain to produce voice.*	0.031	376
<b>P7</b>	I tried to change my voice to sound different.	0.007	374
<b>E1</b>	I am tense when talking to others because of my voice.	0.045	376
<b>E4</b>	My voice problem upsets me.*	0.025	377
<b>E5</b>	am less outgoing because of my voice problem.	0.031	377
<b>E6</b>	My voice makes me feel handicapped.*	0.007	378

**Table 2.** VHI questions for which patients who enrolled in therapy scored significantly higher. Asterisks (\*) indicates questions items included on the VHI-10.

- The “completed” and “partially completed” groups had statistically similar initial and final VHI/VHI-10 scores.
  - The parameters used to define therapy completion and subsequent discharge may be too focused on provider expectations.
  - Research in therapy compliance has shown that “drop-outs” often perceive that they were successful in their endeavor.<sup>7</sup>
  - Emphasizing patient-specific treatment goals could improve resource management by reducing “no show” and clinically unnecessary appointments, and may improve patient satisfaction.
- Additional barriers to patient engagement need further examination.
  - When asked prospectively about their intent to participate in VT, 85% indicated they planned to attend therapy, well above the reported compliance rates in the literature.<sup>8</sup>
  - When non-adherent patients were queried about their reasons for not participating in VT, 46% responded “lack of interest.”<sup>9</sup>

