



Socioeconomic Barriers to Voice Therapy

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ABSTRACT

Objectives: To identify socioeconomic barriers preventing patients from obtaining speech therapy (SLP).

Study Design: Retrospective cohort study.

Methods: Adult patients evaluated for laryngologic complaints from March 2013 to May 2014 and referred to SLP were included. Outcome measures were pursuit of SLP (defined as attending an initial evaluation) and compliance with SLP (defined as > 2 visits).

Results: A total of 230 patients were eligible for the study. Forty-six percent pursued SLP and 36.5% were compliant.

After univariate analysis, patients significantly less likely to pursue and comply with SLP ($p < 0.05$) were older aged, non-professional voice users, non-Caucasian (compliance only), non-English speaking, unemployed, lower median household income, shorter distance to SLP, and lack of insurance coverage. Gender and VHI-10 were not significant.

After multivariate analysis, patients who were male (OR [95% CI]: 2.05[1.07–3.93]) and had a longer distance to SLP were more likely to pursue SLP, while non-Caucasian patients (OR= 0.31[0.16–0.61]) and older patients (OR = 0.97[0.96–0.99]) were less likely to pursue SLP. Non-Caucasian patients (OR = 0.32[0.16–0.63]), and older patients (OR = 0.97[0.96–0.99]) also were less likely to comply with SLP. Patients in the 3rd quartile distance to SLP were most likely to comply with SLP (OR = 5.85[2.32–14.73]).

Conclusions: Multiple socioeconomic factors influence a patient's ability to pursue and comply with SLP. Recognizing these barriers is the first step towards finding solutions.

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INTRODUCTION

The largest epidemiologic study of the prevalence of voice disorders in the United States revealed that 29.9% of 1,326 adults surveyed experienced voice problems at some point during their lifetime.¹ Nearly a quarter (24.4%) of those who sought professional help also had seen a speech-language pathologist. The benefits of a multidisciplinary approach including a speech-language pathologist (SLP) in the treatment of voice and swallowing disorders have been well documented.² The American Academy of Otolaryngology – Head & Neck Surgery Clinical Practice Guidelines on Hoarseness also made strong recommendations that clinicians should advocate for voice therapy for patients diagnosed with dysphonia that is affecting voice related quality of life (V-RQOL).³ Recommendations were based on grade A evidence from randomized controlled trials and systematic reviews.

Although speech therapy has been shown to be beneficial for achieving optimal voice and swallowing outcomes, many socioeconomic barriers exist preventing patients from being able to pursue and remain compliant with speech therapy in the outpatient setting. Some of these potential socioeconomic barriers for a tertiary referral laryngology practice in a large metropolitan setting were investigated in this study.

METHODS

-Permission was obtained from our Institutional Review Board (IRB) at Drexel University College of Medicine.

-Adult patients (≥ 18 years old) evaluated for laryngologic complaints from March 2013 to May 2014 and referred to SLP were included in this study.

-Patient demographics, Voice Handicap Index-10 (VHI-10), employment status, occupation, median household income determined from the zip code, health insurance coverage of SLP services, distance to SLP, and SLP attendance were obtained from each patient's medical record.

-Outcomes measures were:

- 1) Pursuit of SLP (defined as attending an initial evaluation)
- 2) Compliance with SLP (defined as attending 2 or more visits).

-Univariate statistical analysis was completed using unpaired Student's t-test for continuous variables and Fisher's exact test for categorical data.

-Multivariate analysis with a logistic regression model was completed with commercially available software R (version 2.15.2).

RESULTS

Gender	M=32.6% F=67.4%
Mean Age	47.1 years
Ethnicity	White=57% Black=29.1% Hispanic=4.8% Other=9.1%
English-speaking	90%
Employed	53.0%
Unemployed	19.1%
Student	14.3%
Retired	12.2%
Professional Voice User	37%
Insurance Coverage for SLP	70%
Average Median Household Income	\$55,689
Mean VHI-10 (n=66)	18.3

Table 1: Demographics of the study group (n = 230).

SLP Pursuit	OR [95% CI]
Older Age	0.97 [0.96-0.99]
Non-Caucasian	0.31 [0.16-0.61]
Male Gender	2.05 [1.07-3.93]
2nd quartile distance	4.51 [1.75-11.61]
3rd quartile distance	4.85 [2-11.77]
4th quartile distance	7.81 [3.13-19.49]

Table 2: 46% of patients pursued SLP. The statistically significant variables are shown. **BLUE** is a positive association. **RED** is a negative association.

SLP Compliance	OR [95% CI]
Older Age	0.97 [0.96-0.99]
Non-Caucasian	0.32 [0.16-0.63]
2nd quartile distance	3.31 [1.24 - 8.86]
3rd quartile distance	5.85 [2.32 - 14.73]
4th quartile distance	4.22 [1.70 - 10.45]

Table 3: 36.5% of patients were compliant with SLP. The statistically significant variables are shown. **BLUE** is a positive association. **RED** is a negative association.

DISCUSSION

Gender: Men were more likely to pursue SLP. This was not statistically significant in previous studies.⁴⁻⁷

Age: Older age was inversely related to SLP pursuit and compliance. One study showed that head and neck cancer patients >60 yrs old were more compliant with SLP.⁷

Ethnicity: Non-Caucasian patients were less likely to pursue and comply with SLP. One previous study found that patients who identified as "other" (non-white, non-black), were more likely to complete voice therapy.⁶ In that study, only 6 patients were in that category, however.

Language: Not significant

Employment: Not significant

Professional voice user: Not significant

Insurance coverage: Not significant

VHI-10: Not significant (univariate analysis only). V-RQOL and VHI were found to be non-significant regarding SLP attendance in other studies.^{5,6}

Median household income: Not significant

Distance to SLP: Patients with a longer distance from home to SLP were more likely to pursue SLP. Patients in the 3rd quartile distance were most likely to comply with SLP. Distance to SLP was not significant in a previous study.⁷

STRENGTHS:

- Large cohort (230 patients)
- Diverse patient population
- Multivariate analysis was performed
- Socioeconomic factors not previously investigated were analyzed including median household income.

WEAKNESSES:

- Retrospective
- Other factors thought to influence SLP attendance as described by Gillespie et al. were not evaluated in this study (the patient-clinician relationship, self-perception of disease severity, cultural norms, family support, and self-efficacy).⁸
- Distance to SLP was based on the assumption that all patients are driving from home. It does not account for patients using public transportation and patients travelling from school or work.
- Incomplete VHI-10 data set
- Median household income was acquired indirectly using each patient's zip code
- Reason for SLP non-attendance was not determined for each patient.

The interdisciplinary clinic model including a laryngologist and SLP was shown to improve patient compliance with voice therapy.⁶ Although our model embodies this principle, at the time of our review, there were 2 separate offices with SLP at one of them. This may have influenced SLP attendance.

CONCLUSIONS

Identification of the socioeconomic barriers for patients pursuing and remaining compliant with voice therapy is the first step towards improving patient outcomes for laryngologic complaints. Investigations exploring solutions to these barriers represent the next challenge.

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