

Patients' Perceptions of and Attitudes Toward Voice Therapy: A Pilot Study

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Summary: Patient perceptions of the therapeutic process have been shown to influence outcomes in various healthcare fields. However, the voice therapy literature lacks a thorough examination of patients' perceptions of the voice therapy process. This cross-sectional pilot study analyzed patient perceptions of voice therapy across four different areas: patient understanding of therapy, the home therapy program, perception of improvement of symptoms, and prioritization of therapy. The study included patients receiving voice therapy for various disorders ($n = 49$). Results showed significant differences by patient age and the number of therapy sessions completed. Patients indicate increased understanding ($P = 0.0676$) and appeared to notice more improvement as therapy progressed ($P = 0.010$). Younger patients indicate higher adherence to their home program ($P < 0.001$, $P = 0.003$). Additionally, correlations were found between patient understanding and the extent to which they prioritize therapy ($r = 0.53$, $P < 0.001$) and the extent to which patients notice improvement ($r = 0.51$, $P < 0.001$). This study highlights possible age and gender differences and the ways in which perceptions may change over time and affect outcomes.

Key Words: Voice therapy—Patient perceptions—Therapeutic process—Therapeutic alliance—Patient understanding—Adherence.

INTRODUCTION

Patients' perceptions of the therapeutic process have been shown to influence outcomes. While this has been demonstrated in medical care, psychotherapy, group therapy, and physical therapy, this effect has been explored minimally within the realm of voice therapy.^{1–6} Considering the well-documented problems of attendance and adherence to therapy,^{7,8} a more thorough understanding of perceptions may aid the voice healthcare team in improving these problems, increasing clinical productivity, and efficiency.⁹ There is a dearth of literature regarding patients' perceptions of the voice therapeutic process. However, the extant literature provides valuable qualitative information regarding patients' views at different points of the therapeutic process. This cross-sectional study seeks to examine patients' perceptions along four parameters to better understand group differences in perceptions and changes in perceptions over time.

Patients' perceptions are considered an indirect element of the therapeutic process that can be overlooked with preference to consider the more direct elements of the process such as type of therapy approach (Resonant Voice, Flow Phonation, Vocal Function Exercises). However, voice therapy necessitates behavioral changes. Therefore, patient motivation is likely a key factor in making lasting changes and improving the voice.

Motivational interviewing has been discussed as an avenue to promote behavior change within the context of voice therapy.¹⁰ This type of interviewing seeks to encourage a patient to move from indecision to actionable, positive change. What's more, the transtheoretical model of health behavior change has been suggested for use in voice therapy.¹¹ This approach emphasizes the identification of barriers to change and promoting patient adherence. It also emphasizes readiness for change. This idea of readiness, a conception of a person's openness to change, has been made measurable through simple scales such as the Readiness Ruler. This has been used in various health behavior change areas including smoking cessation, drug addiction, and alcohol abuse.^{12,13}

While readiness for change likely contributes to patient motivation, additional patient perceptions merit consideration as mediators of motivation.³ In the field of medicine, research has shown that patient-perceived physician empathy can affect patient satisfaction and compliance.² These researchers included mediating factors such as “information exchange, perceived expertise, interpersonal trust, and partnership.” The latter two—interpersonal trust and partnership—may be considered elements of the therapeutic alliance, a conceptualization of the relationship between the provider and patient. This is echoed within psychotherapy. Lambert and Barley,³ in their review of the psychotherapy literature, identified the therapeutic relationship as a “main curative component” with significant contribution from perceived empathy, warmth, and congruence.

Extension of these findings to voice therapy is reasonable. However, voice therapy addresses a behavior that most patients have seldom considered before—phonation. Additionally, voice therapists must juggle several additional factors while treating the voice, including motor learning, social factors, vocational factors, and psychological factors.¹⁴ In their qualitative study of patient perceptions of

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voice therapy, van Leer and Connor¹⁵ interviewed 15 patients who had received at least two sessions of voice therapy. These interviews yielded three major themes: (1) voice therapy is challenging, (2) the effect of motivation and self-efficacy, and (3) the therapeutic relationship is important. While the authors identified several sentiments similar to other interventions necessitating behavioral self-regulation (i.e. smoking cessation, weight loss), they also found voice-therapy-specific perceptions. These include the challenging aspect of somatosensory awareness in voice as well as the perception that voice therapy exercises are silly.

While van Leer and Connor explored patient experiences, Ziegler et al.¹⁶ sought to identify patient preferences to encourage improved adherence. Among 45 patients with primary muscle tension dysphonia and patients with benign mid-membranous vocal fold lesions, the researchers found that direct voice therapy with tailored exercises and a focus on transfer to conversational speech were perceived to be most beneficial to patients. Interestingly, patients perceived carryover to conversation to be the most difficult part of voice therapy too. These findings are similar to van Leer and Connor's, showing that therapy is challenging and self-efficacy is important.

van Leer and Connor¹⁵ proposed a cyclical hypothetical relationship in which beliefs about therapy influence adherence to therapy which subsequently influences therapy outcomes. Though this has yet to be borne out in the literature, it has clear application to the current voice therapy landscape, especially as it pertains to attendance and adherence. Portone et al.⁸ found that 38% of patients did not adhere to physician recommendations for voice therapy. Further, of those patients who initially presented for therapy, 47% failed to return for follow-up. If this model is applied by addressing beliefs about therapy, adherence to therapy may be improved with subsequent improvement in outcomes. This has the potential to help improve clinical productivity and efficiency.

The present study seeks to evaluate patient perceptions along four parameters: understanding, adherence, priority, and noticing improvements. The cross-sectional design of the study allows for consideration of the changes of perceptions over subsequent therapy sessions.

MATERIAL AND METHODS

This study was completed at the Blaine Block Institute for Voice Analysis and Rehabilitation, a private, outpatient clinic providing speech-language pathology services alongside a general otolaryngology practice, Southwest Ohio ENT Specialists, Inc.

Questionnaire design

A six-item Likert scale questionnaire was developed to analyze four aspects of patients' perceptions: patient understanding, home program adherence, noticing improvements in voice, and priority of therapy. All statements were crafted with affirmative language, using the same Likert scale (1–9,

Understanding	1. I understand the reason(s) I am attending voice therapy.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
		1	2	3	4	5	6	7
	2. I understand the purposes of the voice therapy tasks.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
		1	2	3	4	5	6	7
Home Program	3. I am able to carry out my voice therapy home program confidently.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
		1	2	3	4	5	6	7
	4. I can reasonably complete my home program as instructed by my therapist.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
		1	2	3	4	5	6	7
Improvement	5. I am noticing improvements because of voice therapy.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
		1	2	3	4	5	6	7
Priority	6. Voice therapy is a top priority in my life right now.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
		1	2	3	4	5	6	7

FIGURE 1. Annotated questionnaire.

where 1 = strongly disagree, 5 = neutral, and 9 = strongly agree). The first author initially created all six statements with consultation from the second author to refine the language of the statements. The two statements regarding understanding were designed to capture patients' understanding of the reasons for attending voice therapy and the purposes of therapy tasks. The two statements regarding patients' home programs were designed to assess patients' confidence regarding their home program as well as the feasibility of completing their home program. A statement was developed to measure the extent to which patients notice improvements in their voice because of voice therapy. Finally, a statement regarding the importance of voice therapy was included as an overt measure of prioritization. The statements and their categories are provided in Figure 1. Two additional voice clinicians with over 20 years of experience in treatment of voice disorders reviewed the questionnaire before its finalization.

Subjects

Participation in this study was optional. Patients receiving treatment from a group of six speech-language pathologists with specialization in the treatment of voice disorders were included. Patients' responses were included if they were enrolled in direct voice therapy and provided responses to all statements on the questionnaire. This included patients receiving therapy for muscle tension dysphonia, functional dysphonia, paradoxical vocal fold movement disorder, transgender voice, and vocal fold lesions. Patients receiving any dysphagia therapy were excluded.

Procedure

Subjects completed a questionnaire at the conclusion of a therapy session. These questionnaires were presented to participants by their treating clinician or front desk personnel. Questionnaires were completed without the treating clinician present to reduce social desirability bias. Once completed, the questionnaires were deidentified and coded with

the subject's identification number, age, gender, and how many therapy sessions they had attended at the time of questionnaire completion. Data was collected over a 6-week period.

Data analysis

Information from the questionnaires was deidentified and entered into a database for descriptive analysis, including calculation of mean values, standard deviations, and correlation coefficients. Further analysis (ie multivariate analysis) was deferred due to the lack of controls in the study.

RESULTS

Sixty questionnaires were completed. Forty-nine met inclusion for analysis. There were 35 female responses and 14 male responses. Some subjects completed questionnaires following multiple therapy sessions. For these subjects, only the first questionnaires completed (ie after the first session) were included for analysis. All additional questionnaires by these repeat subjects were discarded. Data analysis was completed with Microsoft Excel's Data Analysis tool, using two-tailed *t* tests for group differences and regression analysis.

Table 1 presents the average response results by question along with the standard deviation to demonstrate the variability with the results. For Statements 1, 2, 3, and 4, responses were, on average, highly positive indicating strong agreements with the statements. Statements 5 and 6 had lower averages with larger standard deviations. No significant group differences were found by gender for each statement. Differences by gender leaned toward significance for Statement 4 with $P = 0.12$ (female average 7.89, male average 8.29).

Differences by age group

To analyze age differences, participants were grouped into the following age groups: 14–24 years, 25–44 years, 45–64 years, and 65 years and older. For Statement 1 (Reason for Therapy), there was a significant difference ($P = 0.029$, $df = 18$) between age groups 14–24 ($\bar{x} = 9$) and 45–64 ($\bar{x} = 8.421$). For Statement 2 (Purposes of Tasks), there was a significant difference ($P = 0.011$, $df = 18$)

between age groups 14–24 ($\bar{x} = 9$) and 45–64 ($\bar{x} = 8.158$). Three significant group differences were found for Statement 4 (Home Program Completion): 14–24-year olds had a higher mean response ($\bar{x} = 9$) when compared to 25–44-year olds ($\bar{x} = 8$) with $P = 0.003$, when compared to 45–64-year olds ($\bar{x} = 7.947$) with $P < 0.001$ and when compared to those 65 years and older ($\bar{x} = 7.917$) with $P = 0.003$. No statistically significant differences were found between age groups for Statement 3 (Home Program Confidence), Statement 5 (Noticing Improvement), and Statement 6 (Priority).

Differences by session number

Responses were grouped by the number of therapy sessions the respondent attended to further analyze the way perceptions may change over time (Table 2). Because the literature has shown that patients perceive significant improvement in about 6 or less sessions of voice therapy,¹⁷ responses for session 7 and greater were grouped together (Figure 2). A weak significant difference ($P = 0.068$, $df = 9$) was found for responses to Statement 1 (Reason for Therapy) between session 1 ($\bar{x} = 8.1$) and >7 sessions ($\bar{x} = 9$). A significant difference between session 1 and >7 sessions was also found for

TABLE 2.
Average Response to Statements by Session Number

	Session Number						
	1	2	3	4	5	6	>7
Statement 1	8.1*	8.7	8.4	8.7	8.8	-	9*
Statement 2	7.9*	8.8	8.4	8.7	8.4	-	9*
Statement 3	7.7	7.9	8.1	7.8	8	-	8
Statement 4	7.8	8.1	8.3	7.8	8.1	-	7.9
Statement 5	5.8* ^T	6.4 ^α	7.9*	7.3	7.5	-	8.2 ^{Tα}
Statement 6	6.8	8.4*	7.1	6.8*	7.1	-	7.3

*,^T Significant difference between these data points in the same row.

TABLE 1.
Average Responses to Statements (n = 52)

Statement	Mean (\bar{x})	Standard Deviation (σ)
1 (Reason for therapy)	8.4	1.4
2 (Purposes of tasks)	8.4	1.3
3 (Home program confidence)	7.82	1.1
4 (Home program completion)	7.9	1.1
5 (Noticing Improvement)	7.1	1.9
6 (Priority)	7.3	1.7

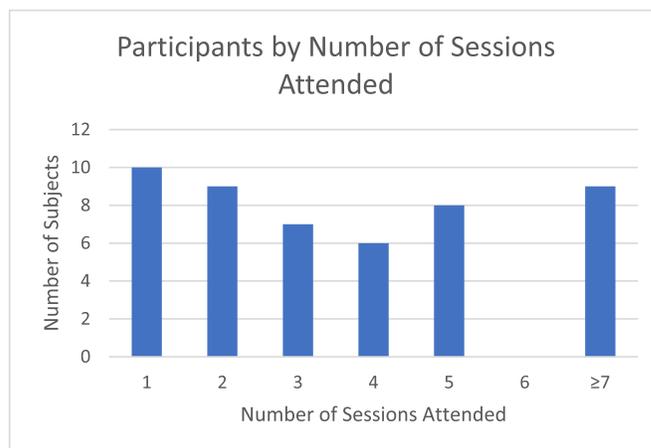


FIGURE 2. Number of participants by number of sessions attended.

TABLE 3.
Correlations Between Responses to Statements

Correlation Coefficients (<i>Pearson's r</i>)						
Statement	1	2	3	4	5	6
1	1	0.86	0.20	0.30	0.51	0.53
2		1	0.19	0.29	0.39	0.47
3			1	0.58	0.24	0.18
4				1	0.18	0.22
5					1	0.19
6						1

Statement 2 (Purposes of Tasks) ($P = 0.066$, $df = 9$, $\bar{x} = 7.9$, $\bar{x} = 9$). For Statement 5 (Noticing Improvement), there was a significant difference in responses between session 1 and session 3 ($P = 0.035$, $df = 15$, $\bar{x} = 5.8$, $\bar{x} = 7.929$) as well as between session 1 and >7 sessions ($P = 0.010$, $df = 12$, $\bar{x} = 5.8$, $\bar{x} = 8.222$). Notably, there were no significant differences for Statement 5 between session 2 and session 3 ($P = 0.129$, $df = 14$) nor between session 3 and >7 session ($P = 0.660$, $df = 10$). There was a significant difference for Statement 6 (Priority) between session 2 and session 4 ($P = 0.0295$, $df = 12$, $\bar{x} = 8.3$, $\bar{x} = 6.833$), though no other significant differences were identified for this statement between other sessions. Differences did not reach significance for Statement 3 (Home Program Confidence) and Statement 4 (Home Program Completion).

Correlations

Correlations between statements, age, and number of therapy sessions attended were calculated (Table 3). A very strong correlation was found for responses to Statement 1 (Reason for Therapy) and Statement 2 (Purposes of Tasks) ($r = 0.86$, $P < 0.001$). A moderate correlation was found between responses to Statement 1 (Reason for Therapy) and Statement 5 (Noticing Improvement) ($r = 0.51$, $P < 0.001$). A similar correlation was found between responses to Statement 1 (Reason for Therapy) and Statement 6 (Priority) ($r = 0.53$, $P < 0.001$). Statements 3 and 4 had a moderate correlation ($r = 0.58$, $P < 0.001$) as did Statements 2 and 6 ($r = 0.47$, $P < 0.001$).

Data was also analyzed for correlation by gender. This revealed some gender differences with fewer correlations noted among males. All previous correlations remained for females with similar levels of effect size. Males had only one significant and very strong correlation between Statements 1 and 2 ($r = 0.83$, $P < 0.001$). No moderate to strong correlations with number of therapy sessions were found.

DISCUSSION

This cross-sectional pilot study sought to collect information about patients' perceptions of voice therapy using a six-item questionnaire. Questionnaire statements were designed to explore patients' understanding, adherence,

prioritization of therapy, and perception of improvement. These data were collected from subjects at several different points in the therapy process in a cross-sectional manner. Data from 49 subjects were analyzed with a wide age range and gender distribution consistent with the extant literature. Data analysis revealed correlations between different perceptions, gender group differences, and differences in responses based on the number of sessions attended.

Correlations between perceptions

Of note, the strongest correlation was found between responses to Statement 1 and Statement 2 which captured the extent of patient understanding regarding (1) the reasons for therapy and (2) the purposes of therapy tasks. This suggests that levels of patient comprehension are consistent across these two parameters. Statement 1 and Statement 2 were moderately correlated with Statement 6, the extent to which patients prioritize therapy. This is an enlightening finding. Patients may prioritize therapy if they feel they understand therapy to a greater extent or, inversely, patients who better understand therapy may prioritize it. Additionally, Statement 1, understanding the reasons for therapy, was moderately correlated with Statement 5, the extent to which a patient notices improvement in their voice. This finding makes sense: a patient with increased recognition of their dysphonia will notice improvements to a greater extent. However, causality cannot be determined due to the nature of the study. Overall, these correlations with Statements 1 and 2 emphasize the importance of patient comprehension. The data suggest that understanding the reasons for voice therapy and the purposes of therapy tasks go hand-in-hand. The latter may be directly influenced by the extent of patient education provided by the voice therapist. Further exploration of the influence of patient comprehension may be helpful in determining any mediating effects it has on perceptions of improvement and prioritization of therapy.

Moderate correlations between the two statements evaluating patients' perceptions of their home program indicate that patient confidence and ability to complete their home program are somewhat related. While these two statements sought to capture different aspects of the home program, the statements may be better constructed in the future to delineate between competence in performing their home program and ability to practice as frequently as instructed.

Gender differences may exist regarding age and its influence on perceptions. Though correlation did not reach significance, that data showed that men may prioritize therapy more so as their age increases while age seems to have little to no effect in women. Additionally, males appear to show many fewer correlations in comparison to the sample size as a whole. This demonstrates the influence of female responses on the sample and suggests that the way in which perceptions influence each other may differ between gender. Interpretation is limited by sample size, especially regarding age, as there were only seven male subjects between ages

45 years and 64 years, and only two male subjects older than 65 years.

Changes in perception over time

The cross-sectional design of this study sought to capture changes in perception over time among subjects as a group. Significant differences were found in responses from those who attended their first session of therapy and those who had attended seven or more sessions. These significant differences were only in response to statements regarding patient comprehension (Statements 1 and 2), suggesting that, as a patient progresses through therapy, his or her understanding of their dysphonia and therapy tasks increases. However, the strength of this supposition is brought into question due to the lack of significant difference found as number of sessions completed increased. Therefore, while there is a difference between this initial session and >7 sessions when it comes to comprehension, there is no clear, defining point at which it seems this level of comprehension shifts.

The data also indicate that patients' perceptions of improvement may increase over subsequent therapy sessions. However, this increase was only significant between the first session and session 3 as well as between the first session and >7 sessions. Again, the relationship here is unclear and is unsupported by regression analysis which revealed a very weak correlation between number of sessions completed and response to Statement 5 ($r = 0.22$).

Additionally, the data illustrated a significant decrease in how much patients prioritize therapy between those who attended four sessions of therapy and those who had attended six sessions of therapy. No overt explanation was noted for this decrease and this pattern of decreasing prioritization was not observed as a whole ($r = 0.06$).

Gender and age differences

Analysis by age group indicated significant differences in patient comprehension between those aged 14–24 years and those aged 45–64 years, suggesting that younger patients indicate higher levels of understanding regarding their voice and therapy. However, no significant difference was found between patients aged 14–24 years and patients aged 65 or more years. While no clear trend exists between extent of patient comprehension and age, there may be additional factors contributing to these differences, such as patient education level and socioeconomic status. In this study, these variables were not examined.

Age appears to play a factor in patients' ability to complete their home program. Younger patients indicated that they were able to reasonably complete their home program as instructed to a higher extent than older patients. There were significant differences between patients aged 14–24 years and all other age groups. However, caution is warranted in this interpretation as the sample size for 14–24-year olds is small ($n = 3$) and likely not representative of the population. Additionally, this trend was not borne out between the older age groups.

There were no differences found regarding patients' confidence in completing their home program **nor** the extent to which they noticed improvement.

While significant differences were identified between age groups, no significant differences were found with gender. However, responses to Statement 4 leaned toward significance ($P = 0.124$), suggesting that male patients may feel higher levels of confidence in completing their home program compared to female patients. However, female patients reported higher levels of improvement in their voice because of therapy. Though this difference also did not reach significance, it suggests that there may be gender differences in patients' confidence in completing their home program as well as in the extent to which they notice improvements.

CONCLUSIONS

This pilot study adds to the small collection of data on patients' perceptions of voice therapy. This study's findings indicate that age and gender differences exist in patient understanding, patient adherence, the extent to which patients notice improvements, and prioritization of therapy. These perceptions may change as a patient progresses through therapy. Further research is warranted to analyze perceptions by type of voice disorder in conjunction with outcome measures to more fully elucidate these relationships.

SUPPLEMENTARY MATERIALS

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.jvoice.2018.05.004](https://doi.org/10.1016/j.jvoice.2018.05.004).

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