

The Development of Conversation Training Therapy: A Concept Paper

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Summary: Objectives. To introduce the conceptual, theoretical, and practical foundations of a novel approach to voice therapy, called conversation training therapy (CTT), which focuses exclusively on voice awareness and efficient voice production in patient-driven conversational narrative, without the use of a traditional therapeutic hierarchy. CTT is grounded in motor learning theory, focused on training target voice goals in spontaneous, conversational speech in the first session and throughout. CTT was developed by a consensus panel of expert clinical voice-specialized speech-language pathologists (SLPs) and patients with voice problems.

Study Design. This is a prospective, clinical consensus design.

Methods. A preliminary CTT approach to voice therapy was developed by the first and last authors (J.G.S. and A.I.G.) and incorporated six interchangeable tenets: clear speech, auditory/kinesthetic awareness, rapport building, negative practice, basic training gestures, and prosody. Five expert voice-specialized clinical SLPs (consensus group) were then presented CTT and a discussion ensued. Later, an informal interview by a neutral third party person occurred for further recommendations for CTT.

Results. The CTT approach was modified to reflect all the consensus groups' recommendations, which included the need for more detail and rationale in the program, troubleshooting suggestions, and the concern for potential challenges for novice clinicians.

Conclusions. CTT is a new therapy approach based on motor learning theory, which exclusively uses patient-driven conversational narrative as the sole therapeutic stimuli. CTT is conceptually innovative because it represents an approach to voice therapy developed without the use of a traditional therapeutic hierarchy. It is also developed using input from patients with voice disorders and expert clinical providers.

Key Words: Voice therapy—Adherence—Motor learning—Voice disorders.

INTRODUCTION

Patients with voice disorders often claim that one of the most challenging issues they face is the transfer of techniques learned in voice therapy to conversation.¹ Most speech-language pathologists (SLPs) use traditional, hierarchical, nonconversational voice therapy techniques when treating people with voice disorders.^{2–11} Hierarchical voice therapy programs target voice techniques in highly structured, nonconversational contexts, such as nonspeech sounds, single phonemes, and rote phrases. This hierarchy necessitates that the final step in therapy is voice use in conversation, if at all.^{2–7,10,12,13} Because patients report that transfer of target voice techniques to conversation is the most difficult aspect of voice therapy, an alternative approach to voice therapy is being proposed to augment and amplify the

effectiveness of voice therapy techniques and programs that currently exist.^{7,14–29} The purpose of the current article was to introduce the conceptual, theoretical, and practical foundations of a novel approach to voice therapy, called conversation training therapy (CTT), that was conceived and developed by a team of expert clinical voice-specialized SLPs and patients with voice problems. This novel approach to voice therapy is based in the tenets of motor learning theory and aims to solve some of the reported conceptual and practical problems with hierarchical voice therapy approaches.

Three major problems exist with hierarchical approaches to voice therapy. First, the use of a hierarchical approach to achieve balanced phonation at the conversational level may necessitate a protracted time in treatment. Most studies using such an approach require anywhere from 6 to 24 voice therapy sessions, each lasting 45–90 minutes in length to achieve conversational proficiency with the target voice goals.^{3,5–7,10,12,30,31} This length of time in treatment is a burden on patient resources financially, socially, and emotionally. This includes time taken off from work, the cost of travel to the treatment center, the cost of treatment itself (reimbursement from insurance and co-pays), and, perhaps most important, the negative impact on the patient's quality of life due to the length of time the patient is without a functional voice for communicative needs of daily living.

Second, attrition rates for behavioral voice therapy are estimated between 16% and 65%.^{21,32–35} Thus, although the literature supports that traditional, hierarchical voice techniques, and programs are effective treatments for

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dysphonia, patients drop out of therapy.^{16,34–38} Relatedly, when long-term data are available, voice problem relapse rates are cited at high levels, between 51% and 68%.^{21,39} One reason for attrition and relapse could be that patients' voice needs are not being met in therapy. Ziegler et al found that 40% of 110 patients who underwent voice therapy and completed a posttherapy survey reported that transfer of voice therapy techniques to “real-life” conversation in the therapy setting was the most useful aspect of voice therapy.¹ Furthermore, 64% of patients reported that transfer to conversational speech was the hardest part of treatment.^{1,9} Similarly, another study of patients' perceptions of voice therapy found that patients could not “execute independently outside of the clinic” and found that “generalization required a substantial degree of mindfulness.”⁴⁰ These data combined may indicate that the structure of traditional, hierarchical voice therapy is not serving the communicative needs of patients, potentially contributing to costly relapse and dropout rates.

Third, hierarchical approaches to voice therapy are not in alignment with two key principles of motor learning theory. The “first principle” violated is that of part versus whole practice. In traditional, hierarchical therapy programs, components of voice production are trained one at a time, in discrete parts inclusive of posture and breathing, to vocalization, resonance and articulation using a gradual progression of sounds, to syllables, to words, and ending at phrase-level implementation. This training approach—where “parts” of a complex task are practiced in isolation instead of the “whole” task (ie, speech)—involves simultaneous activation of all components of the skill and may improve immediate performance but is not necessarily conducive to “long-term retention” of the targeted skill.²⁴ The complexity of a task enhances learning of that task.^{41,42} Building a hierarchy from less complex to more complex skills may actually impede generalization through unnecessary segmentation.^{43–45} For example, having a patient prolong a fricative (eg, /z/) is a simpler task than having a patient monitor voice production in conversation. The fields of phonology, syntax, semantics, apraxia of speech, and mathematics have demonstrated that targeting complex, whole, behaviors enhances learning.^{43,46–52} The “second principle” is the importance of contextual relevance. Contextual relevance states that in order for a skill to be learned and transferred to novel situations (in voice, novel conversation), tasks trained in the learning of that skill must closely resemble real-life tasks.^{53–55} For voice therapy, real life would include speaking in conversation in contexts such as background noise and on the phone. It would not include reading lists of therapeutic words or holding out single sounds. In addition, experience-dependent neuroplasticity principles of “salience” and “specificity” are violated by training tasks that are extraneous to the patient and not clearly related to the real-life act of communicating verbally.⁵⁶ Said differently, the best modality for training is the modality needed to execute the task.⁵⁷ The approach to skill acquisition in traditional, hierarchical voice therapy is in direct conflict with the principle of contextual relevance, salience, and specificity.^{54,56}

Only two examples exist in the voice therapy literature with a clear, early, and maintained focus on transfer of target voice goals to conversational speech. Grillo⁵⁸ evaluated four participants with voice problems in her self-developed “Global Voice Therapy Model.” This model consisted of one session of hierarchical therapy using a bottom-up approach and transitioning in the end of the first session through a hierarchy to conversational speech. The additional four to five sessions were focused on contrasting the “new” voice to the “old” voice in conversation-based tasks. This foundational study was the first to demonstrate effectiveness of a voice therapy program focused on target voice production in connected speech.

Another voice therapy program clearly aligned with the importance of conversational speech was developed by Behrman and Haskell in 2013.⁵⁹ The therapy involved five main components: (1) pausing; (2) visual connection; (3) clear vowels; (4) vocal variety; and (5) physical connection. The therapy evolved from the author's years of experience as both an SLP and public speaking coach to business executives. The premise of the therapy was to increase “interpersonal connections” and help clients to “display outwardly his or her inner concept of authentic self.” Video analysis was recommended in “facilitating discussion on the effect of the target behavior changes on the overall impression the client is projecting to the listeners.”

The goal of the present article was to introduce the conceptual, theoretical, and practical foundations of a novel approach to voice therapy, called CTT, designed by expert voice-specialized clinical SLPs, which effectively responds to the problems identified with traditional, hierarchical voice therapy, as well as patient's perception of barriers to voice therapy. CTT is grounded in motor learning theory, focused on training target voice goals in spontaneous, conversational speech in the first session and throughout.

METHODS

A prospective, clinical consensus design was implemented to develop CTT.

Preliminary novel approach to voice therapy—conversation training therapy

The first and last authors (J.G-S. and A.I.G.) of the present article (herein described as the developers) crafted a draft of the CTT approach based on information gleaned from patient surveys about voice therapy as part of a prior investigation and from publication by van Leer et al.^{1,40} First, a voice therapy approach rooted in motor learning theory using conversational speech as the sole stimulus was developed. The preliminary CTT approach incorporated six interchangeable tenets: (1) clear speech; (2) auditory and kinesthetic awareness of voice production; (3) rapport building; (4) negative practice; (5) embedding basic training gestures into speech; and (6) varying prosody. Theoretical rationale for the previously mentioned tenets follows.

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