Is More Intensive Better? Client and Service Provider Outcomes for Intensive Versus Standard Therapy Schedules for Functional Voice Disorders

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Summary: Background. Functional dysphonias are commonly associated with reduced treatment attendance leading to variable treatment outcomes. Preliminary research has proposed that intensive treatment may improve client adherence and outcomes; however, further research into the application of intensive models in functional dysphonia in comparison with standard intensity models is warranted.

Aims. The present study evaluated the impact of intensive and standard treatments on functional, well-being, and service outcome measures in clients with functional dysphonia.

Methods. Participants with a functional dysphonia were randomly allocated to one of two treatment groups: (1) intensive treatment (n = 7) or (2) standard treatment (n = 9). Participants completed the voice handicap index (VHI) and the Australian therapy outcome measures voice assessment (conducted by a blinded assessor) before and after treatment and 4 weeks after treatment. Satisfaction questionnaires were completed after treatment and data pertaining to attendance and duration of intervention were collected throughout treatment. In addition to a vocal hygiene education session, all participants received a total of 8 hours of treatment; intensive treatment consisted of four 1-hour treatment sessions per week over 2 weeks, whereas the standard group received one 1-hour treatment session per week over 8 weeks.

Results. High satisfaction and statistically significant improvements on the VHI ratings were found after treatment in the intensive group. Significantly greater attendance rates were found in the intensive group. Intensive treatment is a potentially viable service delivery option for functional dysphonia and warrants further larger scale investigation.

Key Words: Functional dysphonia–Treatment–Intensive–Motor learning.

INTRODUCTION

Voice disorders currently impact up to 4% of Australian adults and 6.6% of adults in America.[1,2] Functional dysphonia, being the result of technical misuse, voice overuse/strain, and inappropriate laryngeal tension, is the most prevalent voice disorder seen by speech pathologists[3] and is reported to account for 57% of voice referrals.[4] Individuals with functional dysphonia often experience difficulties in performing daily tasks requiring oral communication, especially in occupations dependant on voice use,[5] and often report reduced well-being.[6] Not surprisingly, it has been estimated that up to a third of the individuals with voice disorders suffer from greater stress, anxiety, and depression compared with the healthy population.[7] Indeed, client reports of quality of life impairments as a result of their voice disorder have been found to be comparable if not more severe than medical conditions, such as rheumatoid arthritis, hemodialysis treatments, and asthma, which would generally be considered to be more serious.[8]

To maximize functional voice outcomes and resultant well-being, voice therapy by a speech pathologist is considered to be the preferred option for treating functional voice disorders as other surgical or medical interventions are generally not indicated.[9] Although a systematic review of seven randomized controlled trials has indicated that voice therapy is effective in improving vocal performance in individuals with functional dysphonia,[10] traditional voice therapy services are frequently associated with poor client compliance, cancellations, and nonattendance.[11–13] Reduced client adherence and cancellations not only lead to emotional frustration for clinicians[14] but also reduced cost efficiency of public health services.[13] However, of even more importance is the negative impact reduced adherence to treatment may have on vocal outcomes, potentially hindering not only an individual's functional voice use but also their overall quality of life as a result of the continued or recurring dysphonia.[13] As the success of voice therapy is heavily reliant on the client's compliance with the voice therapy process,[14] further investigation into service delivery models which both maximize client adherence and voice outcomes and resultant well-being is warranted.

Traditionally, voice therapy services for functional dysphonia are provided approximately once a week over a number of months,[15] with published voice therapy techniques using a once weekly format for approximately 8 weeks.[16,17] A new and innovative service delivery model that has been proposed to not only increase client attendance but also yield improved client outcomes is a high-intensity voice therapy model.[18] In contrast to standard weekly voice therapy, an intensive model provides greater opportunity for practice and transfer/generalization,[18] being consistent with the principles of motor learning, which certain authors assert to be essential for acquisition and maintenance of healthy vocal behaviors.[19,20] Although

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increased attention into the principles of motor learning has emerged in the area of speech pathology with particular focus on intensity of treatment[21] or using a massed practice schedule (ie, more sessions provided over shorter amount of time), limited research has been devoted to exploring how principles of motor learning including practice distribution apply to therapy for functional voice disorders.

One intensive voice treatment that boasts a large body of evidence supporting its efficacy is the Lee Silverman Voice Treatment or LSVT-LOUD.[22–25] This program is delivered intensively (using a massed practice schedule), over 16, 1-hour sessions for 4 days a week throughout 4 weeks and has been evidenced to yield functional voice improvements in individuals with Parkinson disease (PD) for up to 2 years after treatment.[24] Although such evidence supports the use of a high-intensity treatment model for voice disorders in PD, research into the application of intensive voice treatment for functional voice disorders requires further exploration.

A concept article by Patel et al[18] examined the notion of a voice therapy "Boot Camp" for individuals with functional dysphonia in which participants received approximately 5 hours of therapy for 1–4 successive days with up to seven different clinicians. Therapy was individualized to address the client's unique needs and aimed to complete in 1 day the content that is typically taught in 2 weeks of traditional therapy. Although potential advantages to intensive therapy were discussed, no specific outcomes were reported in the article.

Another study investigated the effectiveness of 2 weeks of intensive voice therapy in 37 individuals with functional and organic dysphonia in combination with physiotherapy and manual therapies compared with a group of 40 healthy control participants.[26] The study revealed significant improvements in a voice handicap questionnaire for participants with moderate dysphonia after the intensive treatment.[26] Although the study did not compare the intensive treatment with a traditional schedule, the authors postulated its potential superiority over less-intensive traditional models. As Fischer et al[26] involved the use of additional physical therapies in its design, it is still unknown what effect the use of intensive voice treatment alone may have on individuals with functional dysphonia. Moreover, it is unknown how an intensive treatment model compares with traditional model once weekly schedules in terms of client outcomes and well-being, as well as client adherence and satisfaction, which would assist in determining the clinical feasibility of such a model.

Verdolini-Marston et al[19] described the effects of providing two different treatment methods (ie, confidential voice and resonant voice) for vocal nodules using an intensive model (eight individual sessions over 2 weeks) compared with a control group (receiving single voice hygiene session only). All participants receiving treatment (n = 8) improved on at least one outcome measure after treatment, with three of these improving across all measures compared with zero of five participants in the control group. The authors indicated that the homework adherence was a predictor of success after both intensive treatments. Although the study demonstrated the potential benefit to voice outcomes that some individuals may achieve after intensive voice therapy, it is unclear whether similar outcomes may have been achieved had a more traditional treatment schedule been used. Furthermore, as participants were not randomly allocated to treatments, potential bias may be inherent within the results. Although nonfibrous vocal fold nodules, as investigated by Verdolini-Marston et al,[19] are considered to be a form of functional dysphonia secondary to muscle tension dysphonia,[27] further research into the use of an intensive treatment schedule in other types of functional dysphonia is warranted.

As highlighted by the current evidence gap, there subsequently exists a need for further investigation into the functional impact of intensive voice therapy in comparison with standard therapy in functional dysphonia, as well as evaluating the effects of treatment on client satisfaction and attendance.

Aims and hypotheses

The primary aim of the research project was to compare intensive voice therapy with standard weekly voice therapy on their impact on functional outcomes and well-being in individuals with functional voice disorders. Second, the study aimed to investigate the clinical feasibility of the intensive treatment model in comparison with the standard treatment model, in relation to client satisfaction, attendance, and compliance. It was hypothesized that individuals receiving the intensive voice therapy would demonstrate comparable or superior functional outcomes in comparison with individuals receiving the standard weekly voice therapy schedule because of the greater opportunity for motor learning. Moreover, it was expected that the project would indicate that the intensive voice treatment would be a clinically feasible service delivery model resulting in comparable if not greater client satisfaction, attendance, and compliance compared with the standard treatment model.

METHODS

Participants

Inclusion and exclusion criteria. Participants were adult outpatients aged between 32 and 76 years referred to Gold Coast Hospital and Health service's voice outpatient clinic at Robina Hospital and presented with a functional dysphonia arising from musculoskeletal etiologies and/or occupational voice use. All participants underwent a nasendoscopy performed by an ear nose throat (ENT) specialist before participation to ensure that there was no vocal fold pathology present where therapy is contraindicated. Participants were excluded if he or she presented with poor English proficiency, known cognitive impairment or neurologic pathology, significant hearing loss, a history of malignant vocal fold pathology or laryngeal surgery, benign vocal fold pathology for which voice therapy is not indicated (eg, vocal polyps, granuloma, cyst), a diagnosed conversion voice disorder, or pregnancy.

Recruited participants. A total of 24 people diagnosed with a functional voice disorder who met the inclusion/exclusion criteria were invited to participate in the study, as depicted in Figure 1. Of these, 17 consented to participate in the study. As detailed in Table 1, eight participants (all female) were