

GROUP VOICE THERAPY AND ITS EFFECTIVENESS IN THE TREATMENT OF DYSPHONIA: A SYSTEMATIC REVIEW

Fonoterapia em grupo e sua eficácia para tratamento da disfonia: uma revisão sistemática

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ABSTRACT

The aim of this study was to conduct a systematic review of voice therapy and its effects in patients with dysphonia. The study is a systematic review of the literature. The survey was conducted from an association of the descriptors "group therapy", "voice" and "dysphonia" (in Portuguese and English) in the *Scientific Electronic Library Online* (SciELO), Latin American and Caribbean Health Sciences (LILACS), *Medical Literature Analysis and retrieval System Online* (Medline) and *The Cochrane Library databases*. 177 articles were found, of which 11 were selected according to inclusion and exclusion criteria. Group voice therapy is effective in the rehabilitation of dysphonia in different target populations.

KEYWORDS: Voice; Dysphonia; Voice Disorders; Therapy; Voice therapy; Group Processes

■ INTRODUCTION

When speech-language pathologists began their practice in the public service around the 1980s, the clinical-care model dominated health practices, limiting them to an individual assistance that often aimed only the installed pathology. In this model, it prioritized exercises and orientation incompatible to the real life conditions of patients with regard to their perception of the disease and its interference in daily life and social inclusion¹⁻³.

With the development of Speech-language pathology and its role in primary health care, there was the need to create strategies that would enable the adequacy of services to meet the high existing

demand. With this objective, group therapy was initially proposed^{1,2}.

Over time, there have been significant changes in concepts and health practices, with the gap of the curative model and the rise of health promotion and disease prevention, bringing a new concept of health and enhancing collective action. Among these is group therapy, which is seen as educational due to the fact that it provides the joint construction of knowledge among subjects and is an important sharing place among patients and between these and the health professional. In addition, knowing that there are other people living in similar conditions allows the modification of the view on pathological processes and the consequent improvement in the perception of patients' health and quality of life¹⁻⁴.

Studies suggest group therapy as a positive experience in speech-language pathology^{2,4-6}, since it operates with health promotion aspects from the construction of concepts and notions of self-care and health education, and offers therapeutic intervention possibilities in which the individual is assisted with a biopsychosocial approach⁴.

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The group is still an enabling environment for the therapist to know each patient through sharing and interacting, so that it directs care in a way that meets the needs and difficulties reported by the participants. It is necessary for the therapist to have a theoretical basis that justifies practices by helping it in how to conduct them. For this, further studies are needed on the subject².

In the voice-related area, the speech-language pathologist works with promotion, prevention and rehabilitation of vocal disorders, called dysphonia. It occurs when the voice cannot fulfill its role of transmitting verbal and emotional messages, characterized by difficulties or changes that hinder its natural production⁷. The installation of dysphonia affects the communicative performance of the individual and, consequently, its well-being and its quality of life, which can result in social, professional and emotional problems⁸.

Because it is composed of people who share a common interest and have a common goal, and between which there are interactions and emotional bonds, the group therapy can motivate the participation of individuals in therapy, help them to cope with the disorder and decrease anxiety levels^{2,9}.

In view of the above, this study aimed to perform a systematic review on group voice therapy and its effects on patients with dysphonia.

■ METHODS

A systematic review study of the literature on "voice and group therapy" was conducted by searching for articles in Portuguese and/or English published in the following databases: *Scientific Electronic Library Online* (SciELO), Latin American and Caribbean Health Sciences (LILACS), *Medical Literature Analysis and Retrieval System Online* (Medline) and *The Cochrane Library*. This research was conducted in August 2014.

The Health Sciences descriptors (HSD) used to search the articles were Terapia de

Grupo/*Group Therapy*; Processos Grupais/*Group Processes*; Voz/*Voice* and Disfonia/*Dysphonia*. The search was performed using an association between these descriptors. Thus, the following combinations of descriptors were used: "*Group Therapy and Voice*", "*Group Therapy and Dysphonia*", "*Group Processes and Voice*" and "*Group Processes and Dysphonia*".

The articles were selected according to eligibility criteria, namely: (a) the presence of the descriptors mentioned in the title, abstract or keywords of articles; (b) studies on group voice therapy; (c) samples with patients of all ages of the life cycle; (d) articles in Portuguese and/or English; and (e) full papers available in the databases. The research was not restrictive as to publication year. Articles replicated in different databases were counted only once.

No systematic review in the *Cochrane* virtual library was found when searching using the same descriptors as those used in this study.

177 articles were found. They resulted from the search of descriptors and 11 were selected for further analyses. A large number of articles were excluded (166 articles) because they did not address group voice therapy and were neither in English nor in Portuguese.

Figure 1 shows the search strategy used for the selection of articles in other databases from the initial search to the final selection of articles, which met pre-established criteria.

As a way of categorizing data, the articles were analyzed according to (a) year of publication, (b) country, (c) target audience, (d) therapeutic methods, (e) before and after group therapy evaluation methods, (f) protocols used to measure vocal aspects, and (g) effectiveness of the group voice therapy.

After completing the search and selecting the articles, data were presented systematically following a crescent chronological order and highlighting the abovementioned aspects.

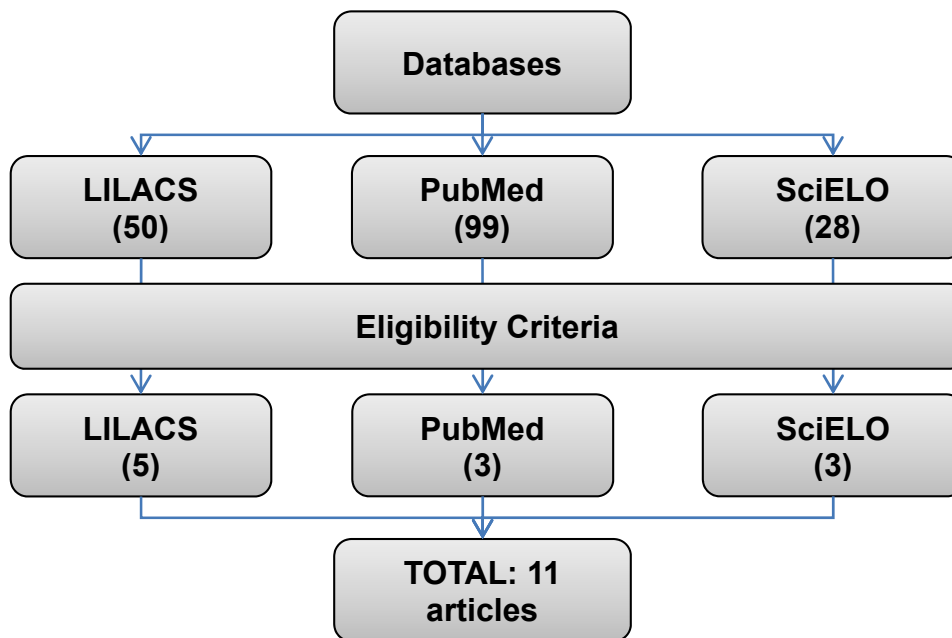


Figure 1 – Flowchart of the search strategy used in the systematic review involving the descriptors “Group Therapy AND Voice”, “Group Therapy AND Dysphonia”, “Group processes AND Voice” and “Group processes AND Dysphonia”

■ LITERATURE REVIEW

It is known that the therapeutic group is a recent practice in speech-language therapy, since this science was consolidated during the welfare model period. A literature review that surveyed articles published between 2005 and 2010 found 28 articles on the topic. Among these, 25% were related to voice therapy. In it, it was observed that this intervention practice was already considered a positive experience to address communication disorders^{3,10}. Thus, the need to know what the literature offers on group processes in vocal rehabilitation was perceived.

Tables 1 and 2 compile the studies found and show searched data as general characteristics and characteristics inherent to the evaluation and intervention, which are explained and discussed in this review.

In 2006, a study with speech-language pathologists¹¹ with experience in public service dysphonia patients was conducted to analyze the procedures and the results of the therapy. For this, a semi-structured interview was conducted containing the characteristics of respondents and information on how the interventions were carried out, from the formation of the group, evaluation of participants and the methodology used to positive and negative

aspects of this therapy. Respondents reported that they initially appealed to group therapy to meet the existing demand. There was no defined number of participants and they were grouped by gender, age or type and severity of voice disorder. Furthermore, it was mentioned that in general, the therapy was not structured, but was guided by listening, seeking to meet the momentary demand.

The professionals pointed group therapy as a strong method of intervention in the treatment of dysphonia and characterized it as a diversity space that allows an interactive dynamic in which the subject is active and co-responsible for its evolution and clinical discharge. As for the negative aspects of the process, the form of initial and ongoing evaluations was mentioned. It is usually conducted within the group itself without the use of specific protocols because in the public service there is no time and no structure to support this practice. Topics such as high absenteeism and low frequency of meetings were also mentioned, a fact that evidences the need for sessions more than once a week¹¹.

In view of the above the abovementioned study¹¹, which addresses the lack of records on before and after-therapy vocal changes or, if any, its non-continuous use or disclosure, it can be posited that there is an influence of this fact in the number of existing publications prior to this investigation. This

Table 1 – General characteristics of the selected studies for a systematic review of group voice therapy for patients with dysphonia

Author/year	Country	Number of Participants	Gender	Target Audience
Vilela and Ferreira, 2006	Brazil	5 - 6 subjects	Male/Female	Speech-language pathologists
Simberg et al., 2006	Finland	6 - 7 subjects	Male/Female	Undergraduate students
Lucchesi et al., 2010	Brazil	Undefined	Male/Female	Teachers
Searl et al., 2011	USA	15 subjects	Male/Female	Parkinson's patients
Shih et al., 2011	USA	32 subjects	Male/Female	Parkinson's patients
Law et al., 2012	China	10 subjects	Female	Teachers
Almeida et al., 2012	Brazil	10 subjects	Male/Female	Teachers
Ribeiro et al., 2013	Brazil	6 subjects	Male/Female	Children
Ribeiro et al., 2013	Brazil	6 subjects	Male/Female	Parents of children
Oliveira, 2013	Brazil	5 subjects	Male/Female	Adults
Santos et al., 2014	Brazil	21 subjects	Male/Female	Seniors

Table 2 – Characteristics of group interventions conducted in reviewed studies

Author/year	Session time	Intervention time	Type of Intervention	Evaluation Before and After Therapy/ Instruments	Effectiveness
Vilela and Ferreira, 2006	Undefined	Undefined	Direct/Indirect	No	Partial
Simberg et al., 2006	90 min	6 weeks	Direct/Indirect	Yes: Auditory-Perceptive (VAS), Voice Symptoms	Yes
Lucchesi et al., 2010	90 min	12 weeks	Indirect	No	Partial
Searl et al., 2011	90 min	8 weeks	Direct	Yes: Auditory-Perceptive (<i>loudness</i>), VHI	Yes
Shih et al., 2011	90 min	12 weeks	Indirect	Yes: Auditory-Perceptive, VHI, QLV	No
Law et al., 2012	90 min	8 weeks	Direct/Indirect	Yes: Auditory-Perceptive, QLV, QCG	Yes
Almeida et al., 2012	45 min	6 weeks (alternating)	Indirect	No	Partial
Ribeiro et al., 2013	40 min	12 weeks	Direct/Indirect	Yes: Auditory-Perceptive (CAPE-V), Acoustic	Yes
Ribeiro et al., 2013	40 min	12 weeks	Direct/Indirect	Yes: Auditory-Perceptive (CAPE-V), Acoustic, PQLV	Partial
Oliveira, 2013	Undefined	8 weeks	Indirect	Yes: Auditory-Perceptive (GRBASI), QLV, APVA	Partial
Santos et al., 2014	60 min	8 weeks	Direct	Yes: Auditory-Perceptive (GRBASI)	Yes

Caption: VAS: Visual Analog Scale; VHI: Voice Handicap Index; QLV: Quality of Life in Voice Questionnaire; CAPE-V: *Consensus Auditory-Perceptual Evaluation of Voice*; PQLV: Pediatric Quality of Life in Voice Questionnaire; APVA: Attendance Profile and Vocal Activities

was the oldest record found on the topic in Brazil during the search.

The recording and dissemination of data are needed for the evidence-based practice that has been gaining credibility over time. The collection and analysis of data before and after intervention are essential in order to generate information on group practice. In addition, these data should be used in a continuous reevaluation of patients, so that the therapist has notions about the impact of the proposed activities through the feedback from participants, as well as the effects on their voice dynamics. Thus, the information should be published, so that they can structurally support other interventions in this type of therapy.

A clinical study performed in Finland⁶ with undergraduate students evaluated the before and after group therapy changes for various voice disorders in a planned and structured way. It demonstrated a greater methodological concern in carrying out the therapy by researchers from that country in relation to Brazilian studies from the same period.

The subjects underwent a clinical speech-language evaluation through a auditory-perceptual analysis using a Visual Analog Scale and reporting voice symptoms through a questionnaire prepared by the authors. Medical evaluations, with indirect laryngoscopy, rhinoscopy and pharynx inspection for signs of infection, were also conducted. Later, they were referred to group therapy.

The groups were composed of six or seven individuals who initially attended a lecture on voice health. The sessions were weekly and lasted 90 minutes. 15 minutes were dedicated to indirect therapy (recalling the initial lecture) and the remaining time was devoted to direct therapy, with resistance exercises using "Finnish tubes". The post-therapy evaluation took place in two stages: at three months and one year after the start of the treatment. It was noticed that at first, there was no significant difference with regard to symptoms and voice quality. Differences were observed only in a second period, demonstrating that there was a change of voice behavior of subjects undergoing therapy. The study concluded that voice therapy in small groups using this approach could be an effective method to treat voice disorders at an early stage.

Comparing national¹¹ with international⁶ studies published in the same year, it is possible to see that the latter has a methodological design because it records the effects before and after treatment if compared to the accounts of speech-language pathologists interviewed in the first research, showing a greater concern about the records of

foreign researchers in the same chronological period.

A literature search¹² performed to verify the effectiveness of direct and indirect voice interventions in isolation and combination, regarding the prevention of voice disorders, with already trained teachers concluded that the combined approach had better results when compared to the isolated intervention. An example is the Finnish test, where there was a concern about education and performing voice exercises. It proved to be effective in dysphonia.

In 2010, there was preventive therapeutic intervention in a group of teachers with and without voice complaints in a public school in a Brazilian city. The teachers were initially assessed by adapting an unspecified protocol concerning vocal and occupational aspects. Questions about voice complaints, the ideal voice for a teacher and suggestions for actions concerning voice health were added¹³. 12 sessions, one per week, lasting 90 minutes, with an indirect therapeutic approach through exhibitions on production and vocal health were conducted. A high dropout rate was reported: from 13 participants, only five completed the intervention, mainly for lack of time to attend the sessions, as justified by the teachers. There were significant differences regarding the decrease in the number of voice symptoms before and after therapy among those who completed the treatment and those who left it. The study evidenced that the intervention was valid, but that it needed to be complemented by the change of environmental and occupational factors of this professional class.

Thus, it is known that an indirect intervention alone is not sufficient to produce the expected voice changes. It is possible that the low attendance is related to the low perception of voice improvement during the therapeutic process.

In the United States, in 2011, a group therapy research¹⁴ with elderly people with Parkinson's disease aimed to demonstrate the feasibility of the direct treatment based on the method *Lee Silverman Voice Treatment (LSVT)*, prioritizing the execution of tasks focused on expanding the *loudness* and the effectiveness of group therapy. There were voice evaluations before and after the eight weekly sessions, which were held once a week lasting 90 minutes each, with the application of the Voice Handicap Index protocol and voice recording, text reading and vowel /a/ sustained in strong and weak *loudness*, with a record of the maximum phonation time. The sound pressure was measured before and after the therapy from a calculation using a sound pressure of 65dB fixed in the PRAAT program and a conversion factor measured by a gauge located 30 cm from the individual. At the end of the period,

it was noticed that 89% of subjects had a higher sound pressure and a reduced perception of voice handicap, confirming that the group therapy was effective in this case.

Concomitant to this study in that country, another research¹⁵ studied the behavior of subjects with Parkinson's disease during 12 intervention sessions, one per week, in groups, in order to observe whether singing therapy improved the loudness of individuals and whether after such intervention the quality of life would increase and the voice handicap index would decrease. The sessions lasted for 90 minutes. 20 minutes were dedicated to stretching and breathing exercises and 70 minutes were dedicated to popular music singing. A speech-language pathologist and a singing teacher directed the therapy. It aimed a kinesthetic perception, intensity calibration and speech effort, increased loudness and vocal range, as well as speech improvement. Evaluations before and after therapy were conducted using the Quality of Life in Voice Questionnaire, the Voice Handicap Index and a auditory-perceptual evaluation, which indicated no significant changes in the aspects studied. It was concluded that the singing therapy was not effective to improve the vocal aspects of subjects with Parkinson's disease.

Considering the two aforementioned studies^{14,15}, which conducted a group therapy with the same target audience but with different results, the type of intervention and methodology are highlighted, in which one intervened directly, focusing on the disorder, and the other intervened indirectly on the voice disorder; this latter intervention was longer and produced unsatisfactory vocal effects on patients.

In 2012, in China, aiming to investigate the group climate in a collective voice therapy, researchers subjected teachers with voice disorders to an intervention similar to that held in Finland⁶. The intervention was structured in eight sessions once a week of indirect voice therapy with guidance on vocal health and relaxation exercises, and direct voice therapy with technics from the program *Lessac-Madsen Resonant Voice Therapy* (LMRVT), adapted to the group. A before and after-therapy evaluation by ENT and speech-language pathology evaluations through voice perceptual analysis was conducted by two experienced speech-language pathologists, who classified the voices as normal or according to degrees of change and through Quality of Life in Voice Questionnaires and Group Climate to measure the quality of life and the perception of the participants in relation to the environment of group treatment and its internal cohesion⁹, respectively.

The results showed that group therapy is effective in reducing voice disorders. In this case, there was a reduction in the number of voice disorder symptoms

and the auto-perception of an improved quality of life, despite the absence of differences in the auditory-perceptual evaluation made before and after the treatment. As for the group climate, it was noticed that the atmosphere of the therapy was positive as to the active participation of members, but also that participants avoided the responsibilities of the therapeutic process. That was the only situation of perception of conflict in the group.

The literature suggests that group activities can bring emotional and social benefits for the subject. Experienced dialogue and sharing situations configure an exchange of experiences that helps overcoming difficulties and individual empowerment relative to the disorder. Those are the main differences between group therapy and individual therapy. It helps patients to improve their self-confidence and independence in order to create their own solutions to minimize difficulties². For this reason, it is assumed that the subject becomes active in its group rehabilitation process. This was not observed in other works⁹.

Some authors⁹ acknowledged limitations in the study such as the lack of a control group, rehabilitated individually, and the small number of participants. They suggested that acoustic and voice aerodynamic evaluations complement the auditory-perceptual evaluation, making the analysis more sensitive to changes in voice patterns. They said it is interesting to research therapeutic processes and techniques used to improve structuring and planning, facilitating vocal rehabilitation, and to investigate the evidence on the immediate and long-term effectiveness of group therapy in addition to considering the therapist's personality, perhaps influencing the conduction of the treatment, and the individual patient characteristics that could influence an active participation, attendance in therapy and rehabilitation, for it affects their vocal production. Thus, the research shows the need for further studies on that topic.

The group is an enabling environment for the therapist to know each patient due to sharing and interacting. Thus, the therapist may direct care in a way that meets the needs and difficulties reported by the participants. It is necessary for therapists to have an adequate profile for this type of care and a sound theoretical basis, justifying its practice and assisting them to lead it. This can also influence attendance. Further studies on this matter are needed¹⁶.

Also in 2012, researchers conducted a speech-language therapy with a group of public school teachers from a municipality in Brazil focusing on public health issues, such as promotion and prevention, through six fortnightly meetings. They conducted workshops with exercises focused on the

needs of the participants, such as body awareness, breath control, stretching and relaxation, improved posture, vocal warm-up exercises and lectures that oriented on occupational aspects and vocal health. A voice evaluation was not made. Only the opinions of the teachers, including on the structuring of the sessions, were considered. From the experience and the reports of volunteers, who were satisfied and recognized the importance of the therapy in their daily life, it was concluded that this practice was effective in maintaining the health of teachers and prevented voice problems. The study also suggests the need to implement care programs to the well-being of teachers¹⁷.

Studies state that speech-language pathology group therapy acts in health promotion aspects considering the construction of concepts and notions of self-care and health education. It offers therapeutic intervention possibilities in which the individual is assisted with a biopsychosocial^{2,3} approach, thus corroborating the results found in this review.

In 2013, a case study¹⁸ with dysphonic children was published in order to characterize their vocal dynamics, before and after group voice therapy through auditory-perceptual and acoustic evaluations using as a parameter the Consensus of Auditory-Perceptual Evaluation of Voice (CAPE-V) and the software *VoxMetria*, respectively. A voice evaluation was initially performed. After 12 sessions of 40 minutes each once a week, which comprised a structured voice rehabilitation program, guidelines were presented to parents and children in order to continue the work on a daily basis. Voice exercises were performed in a playful way, such as technical nasal sounds, vibrant sounds, basal sounds, the yawn-breath technique, chanted voice technique and fricative sounds. At the end of the treatment, it was concluded that group speech-language therapy promotes changes in vocal dynamics of dysphonic children considering the auditory-perceptual parameters of the voice, as there was no statistically significant difference in the overall degree and voice roughness before and after therapy⁴. Another research¹⁸ by the same authors with the same sample and intervention characteristics sought the opinion of parents of children on their quality of life before and after the treatment and found that, despite the improvement of vocal patterns, there was no correlation between the quality of life of children and their vocal quality, neither was there a significant difference in the two periods evaluated.

It was observed that voice group therapy is effective for various types of populations and dysphonia. Little is found in the literature about its effectiveness and the effects on auditory-perceptual

and voice acoustic patterns in adults. Therefore, the adaptation and replication of the methodology of the studies presented is interesting, allowing a record of data that may serve as evidence for clinical practice using the group therapy method with this population.

The study that reported an intervention in dysphonic adults who did not use their voice professionally¹⁹ was conducted in 2013 with the objective of evaluating in a multidimensional way the effectiveness of a voice therapy group program with a cognitive behavioral basis in adults with behavioral voice disorders. Two groups were formed, with five participants each, one subjected to conventional therapy and the other to behavioral therapy. These therapeutic methods were composed of guidance on wellness and vocal health, besides vocal techniques such as fricative emissions and respiratory training. The latter also had a cognitive orientation, involving directed instructions and using sharing experiences and reflections, for example, for the explanation of the harmful effects on communication.

Comparisons were established using different evaluation tools before and after therapy, which covered issues such as symptoms, auditory-perceptual voice analysis conducted by three experts through GRBASI and validated questionnaires: Quality of Life in Voice and Analysis of Participation and Voice Activity Profile. After the treatment, it was observed that speech-language therapy was effective for both groups regardless of the therapeutic program used. However, the cognitive-based intervention appears to have improved the voice-related quality of life of the subjects. This may have occurred precisely because the therapy focused on the vocal behavior of individuals with voice disorders, i.e., reflexes from inadequate habits.

The latest study found²⁰ was conducted in Brazil and its publication date is 2014. The objective was to verify the efficacy of the technique "Resonance tubes - Finnish method" in a group of institutionalized elderly individuals with complaints of vocal and respiratory changes. They were divided into two groups. One was an intervention group that participated in six sessions with the technique "resonance tube", and the other was the control group, which participated in six vocal health workshops, both lasting 60 minutes each, one once a week. In the re-evaluation process, based on the comparison of vocal analysis according to the GRBASI scale and the results of spirometry performed before and after therapy, it was concluded that the Finnish technique had an efficacy in therapy with elderly individuals with presbyphonia symptoms. It helped to improve the voice quality in all parameters of the scale, except breathiness, and the improvement of vital capacity²⁰. These results corroborate the findings in

the aforementioned study with Parkinson's disease patients¹⁴.

■ FINAL COMMENTS

In Brazil, the most recent studies, dated from 2012/2013, have a more structured methodological design in relation to the intervention methodology. They use a vocal reevaluation before and after therapy in order to prove the effectiveness of group voice therapy. In other countries, it was observed that there is an earlier and greater methodological rigor.

Regarding interventions, the groups generally consisted of a small number of individuals, around six to eight participants, and were mixed in terms of gender. The sessions usually occur once a week lasting 90 minutes each and involve an average of seven weeks of intervention. Stretching exercises and cervical relaxation, vocal warm-up, semi-occluded vocal tract techniques and workshops mainly addressing health and vocal production aimed

at the rehabilitation of disorders were performed. It was also noted that most of the research performed direct and indirect interventions combined, but those that prioritized the direct voice therapy had better results regarding voice quality.

In addition, most of the reviewed studies considered group voice therapy as an effective method to treat dysphonia in all analyzed ages, taking into account their limitations and suggestions to vocal health campaigns and prevention of voice disorders. This evidence stands out as important because it underlies the practice of group processes for vocal rehabilitation services with a high demand of patients, making the service fast and dynamic.

In view of the above and considering the small number of group intervention studies found, it is important to continue the research on the topic describing in detail the conducted intervention, from evaluation to addressed vocal techniques. It is also important to record evidences for clinical practice on aspects such as symptoms and vocal risk factors, attendance and coping with group therapy and vocal self-evaluation, for example.

RESUMO

O objetivo deste estudo foi realizar uma revisão sistemática sobre terapia vocal de grupo e seus efeitos em pacientes com disfonia. O estudo é do tipo revisão sistemática da literatura. A pesquisa foi realizada a partir da associação dos descritores (também em inglês) "terapia de grupo", "voz" e "disfonia", nas bases de dados *Scientific Electronic Library Online* (SciELO), *Literatura Latino-Americana e do Caribe em Ciências da Saúde* (LILACS), *Medical Literature Analysis and Retrieval System Online* (Medline) e *The Cochrane Library*. Foi encontrado um total de 177 artigos, sendo 11 selecionados, segundo critérios de inclusão e de exclusão. A modalidade de terapia de grupo é eficaz na reabilitação das disfonias em diferentes populações-alvo.

DESCRITORES: Voz; Disfonia; Distúrbios da Voz; Terapêutica; Fonoterapia; Processos Grupais

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