



Elaboration of a guide on children's vocal health

Elaboração de um guia sobre saúde vocal infantil

Elaboración de una guía sobre salud vocal infantil

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Abstract

Introduction: Educational materials on voice care support in clinical care and dysphonia prevention, however, are scarce. Therefore, this study aimed to elaborate and evaluate a guide on child vocal health for parents and children. **Description:** The elaboration of the guide covered: Bibliographic Survey in the databases Biblioteca Virtual em Saúde (BVS) and MEDLINE Public/Publisher (Pubmed); Themes writing; Organization/writing of the contents/references; Selection of images. Structure of the guide: Voice production; Most common signs/symptoms of vocal disorders; Causes of voice disorders in childhood; Consequences of voice disorders in childhood; Professionals involved in diagnosis and treatment; Myth and Truth about voice; How to prevent vocal disorder in childhood; Voice-friendly activities. The evaluation was in a focus group, via Google Meet, with three Master Judges in Speech Therapy, who discussed qualitatively aesthetics, content and organization. The discussion was coordinated by the co-supervisor and the following recommendations were consensus among the judges: Aesthetics - adjust location of references, elaborate track game, standardize drawings/colors and, create mascot; Content - relevant material, decrease texts, tailor language for children, use/QR-Code links for extra information and, add guidance for teachers; Organization - topics in hierarchical order, content according to theme and separate subjects by chapters. **Final Considerations:** Improvements were pointed out, however, the judges emphasized the importance of this material in the speech therapy clinic and vocal health promotion. The focus group was important for the guide's first evaluation.

Keywords: Voice; Dysphonia; Child; Parent-Child Relations; Guide; Health Promotion.

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Resumo

Introdução: Materiais educativos sobre cuidados com a voz dão apoio no atendimento clínico e prevenção de disfonia, entretanto, são escassos. Portanto, este estudo objetivou elaborar e avaliar um guia sobre saúde vocal infantil para pais e crianças. **Descrição:** A elaboração do guia abrangeu: Levantamento Bibliográfico nas bases de dados Biblioteca Virtual em Saúde (BVS) e Público/editora MEDLINE (PubMed); Escrita dos temas; Organização/escrita dos conteúdos/referências; Seleção de imagens. Estruturação do guia: Produção da voz; Sinais/sintomas mais comuns de alterações vocais; Causas dos distúrbios vocais infantis; Consequências do distúrbio vocal infantil; Profissionais envolvidos no diagnóstico e tratamento; Mito e Verdade sobre voz; Como prevenir o distúrbio vocal infantil; Atividades amigas da voz. A avaliação foi em grupo focal, via *Google Meet*, com três juízes mestrandos em Fonoaudiologia, que discutiram qualitativamente estética, conteúdo e organização. A discussão foi coordenada pela coorientadora e as indicações, realizadas por consenso entre os juízes: Estética - ajustar local das referências, elaborar jogo de trilha, uniformizar desenhos/cores e criar mascote; Conteúdo - material relevante, diminuir textos, adequar a linguagem para crianças, usar *links/QR-Code* para informações extras e acrescentar orientações para professores; Organização - tópicos em ordem hierárquica, conteúdo relacionado ao tema e separar assuntos por capítulos. **Considerações Finais:** Foram apontadas mudanças, porém, os juízes ressaltaram a importância deste material na clínica fonoaudiológica e na promoção de saúde vocal. O grupo focal foi importante para a primeira avaliação do guia.

Palavras-chave: Voz; Disfonia; Criança; Relações Pais-Filho; Guia; Promoção de Saúde.

Resumen

Introducción: Los materiales educativos sobre cuidados con la voz dan apoyo en la atención clínica y prevención de la disfonía, sin embargo, son escasos. Por lo tanto, este estudio tuvo como objetivo elaborar y evaluar una guía sobre salud vocal infantil para padres e hijos. **Descripción:** La elaboración de la guía abarcó: Levantamiento Bibliográfico en las bases de datos Biblioteca Virtual en Salud (BVS)/MEDLINE Público/Editor (PubMed); Escritura de los temas; Organización/escritura de los contenidos/referencias; Selección de imágenes. Estructuración de la guía: Producción de la voz; Signos/síntomas más comunes de alteraciones vocales; Causas de los trastornos vocales infantiles; Consecuencias del trastorno vocal infantil; Profesionales involucrados en el diagnóstico y tratamiento; Mito y Verdad sobre voz; Cómo prevenir el trastorno vocal infantil; Actividades amigas de la voz. La evaluación fue en grupo focal, vía *Google Meet*, con tres jueces maestros en Fonoaudiología, que discutieron cualitativamente estética, contenido y organización. La discusión fue conducida por la coordinadora y las indicaciones, realizadas por consenso entre los jueces: Estética - ajustar lugar de las referencias, elaborar juego de pista, uniformizar dibujos/colores y crear mascota; Contenido - material relevante, disminuir textos, adecuar el lenguaje para niños, usar *links/QR-Code* para informaciones extras y añadir orientaciones para profesores; Organización - tópicos en orden jerárquico, contenido relacionado al tema y separar asuntos por capítulos. **Consideraciones Finales:** Se señalaron cambios, sin embargo, los jueces resaltaron la importancia de este material en la clínica fonoaudiológica y en la promoción de salud vocal. El grupo focal fue importante para la primera evaluación de la guía.

Palabras clave: Voz; Afonía; Niño; Relaciones Padres-Hijo; Guía; Promoción de la salud.



Introduction

Dysphonia is characterized as a voice disorder which, consequently, leads to changes in vocal quality, with symptoms such as hoarseness, breathiness and complaints of vocal effort¹.

Childhood dysphonia, which occurs between five and 10 years of age, has a prevalence of up to 38%² and can result in social and emotional problems³⁻⁵, in addition to creating barriers in the child's school and professional life⁶.

The main causes of childhood dysphonia include environmental, psychological and personality structure factors^{5,7-8}, which are related to inappropriate vocal behaviors⁷⁻⁹.

In this sense, children may also have greater difficulty in understanding the severity of their problem, which can negatively impact adherence to therapy, often requiring parental support for the child's engagement in treatment¹⁰.

In the literature, several common habits of parents and dysphonic children are described as harmful to the voice, such as screaming, speaking loudly, making tense vocalizations, talking excessively, making inspiratory phonation, sudden vocal attack, constant clearing of the throat, talking in a noisy environment, laughing or crying excessively, coughing, and imitating other voices, among others^{7,11}.

Promoting vocal health and preventing abusive vocal behavior helps promote a child's overall development. In this context, there are several strategies that can be carried out with a view to this end, including the provision of educational material on vocal health care¹²⁻¹⁸.

It should be noted that educational materials, such as booklets, guides and manuals are up-to-date materials, offered through government campaigns aimed at facilitating access to information for people from different social and cultural contexts¹⁹. In this sense, these materials can contribute to bringing scientific information to an uninformed public, so that even the reader with a low level of education can understand them¹⁹, in addition to being able to contribute to guide the approach and interventions of the therapist and the students of speech-language pathology.

Thus, the preparation of educational material on vocal health for parents and children must include several stages, so that it can be made available with correct and relevant information.

After searching for the topic in the literature, it is essential to evaluate experts in the field regarding its content and its usability in clinical speech-language pathology¹⁸.

Therefore, this work aimed to present the elaboration process of a guide on children's vocal health, intended for parents and children and that can serve as support material in the vocal clinic, so that speech-language pathologists can use the material in children's vocal therapy.

Description

This work is part of a broad research project that was approved by the Human Research Ethics Committees, under the CAAE [*Certificate of Presentation for Ethical Consideration*] No.: 30040720.7.0000.5406 and conducted in accordance with the regulations of the Brazilian National Health Council (Resolution No. 466/12; 510/16).

The guide on children's vocal health began to be prepared based on a bibliographical survey of the literature on the subject in the Virtual Health Library (VHL) and MEDLINE (PubMed) databases.

The bibliographical survey was carried out with the selection of some words related to the topic and, then, the researcher organized the search for the descriptors in Portuguese through the Health Sciences Descriptors (DeCs) and their correspondents in English (MeSH terms) related to the target words (Table 1).

Thus, the research included Health Sciences Descriptors (DeCs) and their corresponding MeSH terms: *voz* (voice), *disfonia* (dysphonia), *criança* (child), *qualidade de vida* (quality of life), *promoção da saúde* (health promotion), *saúde da criança* (child health), *guia* (guide), *guia de prática clínica* (practice guideline), *educação* (education), *educação em saúde* (health education), *educação infantil* (child rearing), *relações pais-filho* (parent-child relations), *materiais* (materials), and *orientação infantil* (child guidance). The search strategies were organized from this survey.

Table 1. Target words of the topic and related descriptors in Portuguese and English

Target word	DeCs	MeSH terms
1.Voz	Voz Distúrbios da Voz Qualidade da Voz Treinamento da Voz	Voice Voice Disorders Voice Quality Voice Training
2.Disfonia	Disfonia	Dysphonia
3.Criança	Criança Bem-Estar da Criança Relações Pais-Filho Saúde da Criança	Child Child Welfare Parent-Child Relations Child Health
4.Promoção da saúde	Promoção da Saúde Serviços de Saúde Escolar	Health Promotion School Health Services
5.Guia	Guia Guia de Prática Clínica Guia Informativo Orientação Infantil Manual	Guide Practice Guideline Resource Guide Child Guidance Handbook
6.Higiene	Higiene	Hygiene
7.Qualidade de vida	Qualidade de Vida	Quality of Life
8.Autoavaliação	Autoavaliação Autoavaliação Diagnóstica	Self-Assessment Diagnostic Self Evaluation
9.Comunicação	Comunicação em Saúde Comunicação	Health Communication Communication
10.Fala	Medida da Produção da Fala Fala	Speech Production Measurement Speech
11.Fonoaudiologia	Fonoaudiologia	Speech, Language and Hearing Sciences
12.Ambiente	Meio Ambiente e Saúde Pública Meio Social Ruído Ocupacional Saúde Ambiental Saúde Pública	Environment and Public Health Social Environment Noise, Occupational Public Health
13.Intervenção	Intervenção Educacional Precoce	Early Intervention, Educational
14.Prevenção	Prevenção de Doenças Prevenção Primária	Disease Prevention Primary Prevention
15.Conhecimento	Conhecimento Disseminação de Informação	Knowledge Information Dissemination
16.Hábitos	Hábitos Estilo de Vida Saudável	Habits Healthy Lifestyle
17.Autocuidado	Autocuidado	Self Care
18.Orientação	Orientação Clínicas de Orientação Infantil	Orientation Child Guidance Clinics
19.Educação	Educação Educação da População Educação em Saúde Educação Infantil	Education Population Education Health Education Child Rearing
20.Materiais	Materiais Educativos e de Divulgação Materiais de Ensino	Educational and Promotional Materials Teaching Materials
21.Comportamento	Comportamento Comportamento Competitivo Comportamento de Redução do Risco Comportamento Imitativo Comportamento Infantil Comportamento Problema Comportamento Social Comportamentos de Risco à Saúde Comportamentos Relacionados com a Saúde Comportamento Paterno	Behavior Competitive Behavior Risk Reduction Behavior Imitative Behavior Child Behavior Problem Behavior Social Behavior Health Risk Behaviors Health Behavior Paternal Behavior
22.Relações	Relações Familiares Relações Profissional-Família	Family Relations Professional-Family Relations

Abbreviation: DeCs - Health Sciences Descriptors.



Two readers reviewed the studies found, that addressed the construction and/or application of materials on children's vocal health education in schools or in voice therapy. These readers were a speech-language pathologist, who is a master and specialist in voice, with three years of experience on the topic of child vocal health, and a student of the last period in the undergraduate course of Speech-language Pathology, with scientific initiations on the subject. The two readers held 10 previously agreed meetings, via Google Meet, to determine the content that should be included in this guide.

The agendas of the meetings were: the definition of the topics to be approached and the steps for the construction of the guide; teaching how to carry out searches in databases; organization of the material; writing the content of the guide; corrections; selection of images and organization of references.

Problems and issues related to voice guidance for parents and children were raised in the meetings.

Based on the collected content, a proposal for a guide on children's vocal health, intended for parents and children and that can serve as support material in the vocal clinic, so that speech-language pathologists can use the material in children's vocal therapy.

The guide was organized with the following contents:

- Voice production;
- Most common signs and symptoms of voice changes;
- Causes of vocal disorders in childhood;
- Consequences of vocal disorders in childhood;
- Professionals involved in diagnosis and treatment;
- Myths and truths about benefits for the voice;
- How to prevent vocal disorders in childhood;
- Voice-friendly activities.

The images used were collected, with permission for download, from the Freepik website and Google Images, respecting copyright.

Good quality images were chosen to compose some content, related to voice production, chil-

dren's behaviors harmful to the voice, professionals involved in the diagnosis and treatment of vocal pathologies, healthy eating and games for the voice.

A focus group was held via Google Meet, at a previously agreed time, lasting 60 minutes, in order to evaluate the material produced. Three Master's students from a Graduate Program in Speech-Language Pathology participated as evaluators, being a clinical speech-language pathologist in a Health Unit and in a private clinic with care for children, and author of a children's book; a researcher in the area of gamification for speech therapy, and; a researcher in the area of voice. The meeting was recorded and all evaluators received the material to be evaluated before the meeting.

The speech-language pathologists discussed the following topics:

- Aesthetics
 - Images
- Content and relevance of information
 - Language suitable for the target audience
 - Consistency of the subjects to be addressed with the objectives
 - Consistency between content and illustration
 - References related to the topic
- General organization

The discussion was coordinated by the academic co-advisor and one of the researchers of the study, following the list of topics mentioned above. The discussion approach allowed interaction between the evaluators, so that the indications were made by consensus among them.

The main researcher transcribed all the content of the evaluators' discussions and organized categories of responses regarding the topics discussed.

Evaluation of the guide by evaluators

A qualitative analysis of the discussion with the speech-language pathologist evaluators was carried out and the data was presented in a descriptive way (Table 2).



Table 2. Characterization of responses regarding the topics discussed, with positive and negative aspects and suggestions for change

Topics	Positive Aspects	Negative Aspects	Suggestions for change
Aesthetics	<ul style="list-style-type: none"> Consistency between the drawings and the contents covered. 	<ul style="list-style-type: none"> Lack of standardization of drawings. Some images are not attractive – “they have an academic format.” 	<ul style="list-style-type: none"> Adjust location of references. Define a color palette. Standardize the drawings – “create a mascot.”
Content and relevance of information	<ul style="list-style-type: none"> Material relevant to the field - “I certainly consider the material to be relevant as it is quite complete.” Important content for vocal health guidance – “the material is consistent with the objectives.” 	<ul style="list-style-type: none"> Lack of therapeutic and playful resource – “practical content is needed to be used.” Too much information on some topics - “guide is a little extensive.” The material has very formal information for lay people - it has a part that says “mid-lower, costo-diaphragmatic breathing”, which is understood as a very complex term. The material does not have the opinion of parents and children about the guide. 	<ul style="list-style-type: none"> Prepare Nine Men’s Morris game with the topic and games related to vocal production. (example: using a balloon). Reduce the amount of information – The content named as “Articulators” available in “Voice production” and “Professionals involved in diagnosis and treatment” have unnecessary content (Figure 1) - “at the beginning of the material, where there is the lung, vocal folds, vocal tract, and articulators, it could be summarized in 1 or 2 paragraphs, and perhaps it would not be necessary to define “the articulators are..”, “the vocal tract is formed...”. The text could go straight to the importance of the vocal tract, the articulating organs, and the required care.” “The part name as “professionals involved in diagnosis and treatment” is a little long. I believe it would be better to just quote, instead of explaining the work, or you could say “who can you contact if your child has a hoarse voice? Speech-language pathologist, Psychologist, Otorhinolaryngologist, etc.” The role of the speech therapist could be maintained in the material, but I would remove the part of the other professionals”. Adapt the language for children. Use links or QR-Code for extra information. Add guidelines for teachers.
General organization	<ul style="list-style-type: none"> Topics arranged in hierarchical order of information and content according to the proposed theme (Figure 2). 		<ul style="list-style-type: none"> Subjects should be separated by chapters, using graphic resources (e.g., balloons) to facilitate handling by the user.



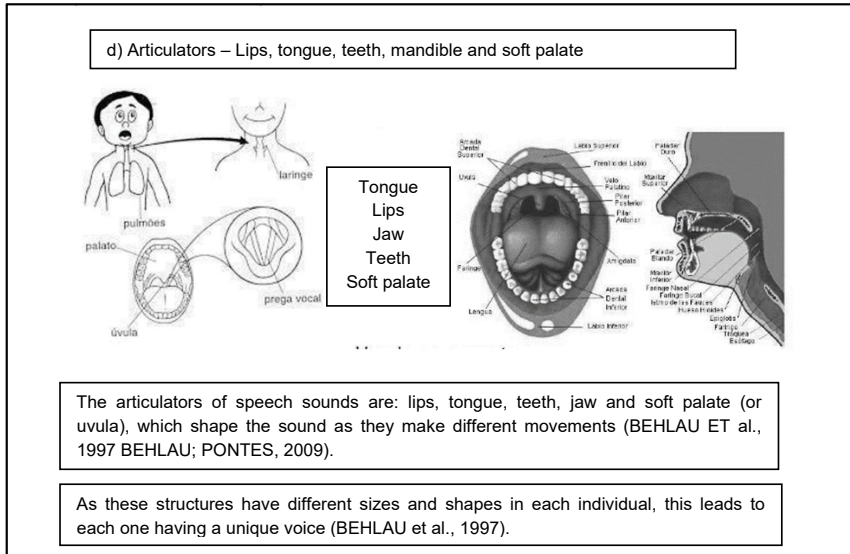


Figure 1. Example of a negative aspect/suggestion for change - content called “articulators”, which is in the “voice production” area, has unnecessary content

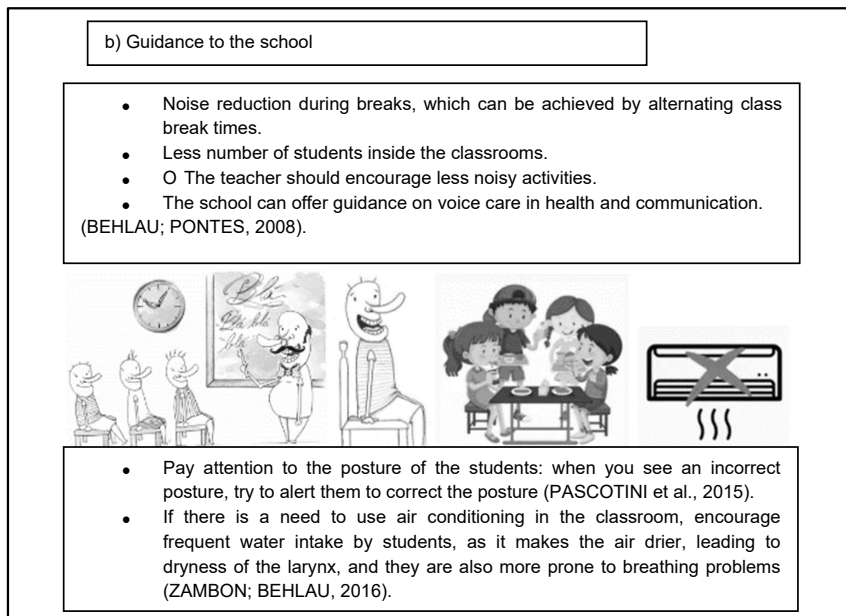


Figure 2. Example of a positive aspect - content on “guidelines for school”, which is available in the area “how to prevent vocal disorders in childhood”, is in line with the proposed theme

Based on the focus group discussions, the researchers discussed topics that should be restructured and their relevance, as follows:

- a) The teaching-learning process can be favored through games¹². In this sense, the inclusion of one or more activities that the speech-language

pathologist or the children’s parents can do in a practical way and together with the child, will enrich the guide, such as the proposed Nine Men’s Morris game;

- b) The use of a color palette, as well as the use of a unique character to give the material a visual



- identity, can help the child to associate with the story and the topic developed;
- c) In this context of visual identity, the way of introducing a new concept must be attractive and induce the reader to be interested in the activity that will be presented and balloons or separation by chapters can be used to this end, as suggested by the evaluators;
 - d) The language used in the guide must be appropriate for the target audience¹⁸. Therefore, it is fundamental to carry out an evaluation by the public that will use the material;
 - e) The use of links or QR-Code for extra information will make the prepared material more attractive to the new generation of children, as well as their families, who are already users of digital technologies, in addition to facilitating reading at different times²⁰.
 - f) The researchers do not agree with the inclusion of guidelines for teachers, as they understand that this content would have a different objective from that proposed in this material.

Final considerations

The evaluators found a need for changes, mainly related to aesthetics and the amount of information, but they also agreed with the relevance of materials like this one for use in the speech-language pathology clinic and for the promotion of vocal health. The focus group was an important method for the first evaluation of the guide on children's vocal health.

The result of the discussion will be used to proceed with the development of the guide, which will then be presented again to the same evaluators for a new virtual appreciation.

Next steps in the guide will include assessment of parents, children and therapists.

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