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Review articles

Proposals to promote health and prevent voice disorders in occupational voice users: A scoping review

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ABSTRACT

Purpose: to characterize the actions of vocal health promotion and/or prevention of vocal disorders applied to voice professionals.

Methods: a scoping review following the PRISMA-ScR guidelines in SciELO and PubMed databases was conducted. Articles that had as participants voice professionals without concomitant vocal treatment, that described proposals for health promotion or vocal disorders prevention, published between 2010 and 2023, were included. They were grouped into categories and data were presented descriptively.

Literature Review: eighteen articles with artistic and non-artistic voice professionals, mostly teachers, were included. Most of the studies focused on healthy voices, aiming at primary prevention. Many articles presented guidance on vocal hygiene and health and used resources such as vocal enhancement, voice workshop, voice amplifiers and apps. All the articles positively mentioned their results, especially with regard to self-perception in relation to voice, vocal quality and quality of life, awareness of positive and harmful practices to the voice.

Conclusion: the proposals contemplated different levels of prevention, but most focused on primary prevention, including vocally healthy participants; all articles indicated positive results in voice self-perception, voice quality and quality of life, and awareness of positive and harmful voice practices.

Keywords: Voice; Dysphonia; Disease Prevention; Health Education; Health Promotion; Speech, Language and Hearing Sciences

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INTRODUCTION

Voice is the main instrument of human communication, capable of presenting a personal identity and conveying various psycho-emotional aspects of the communicator to listeners. It is also an important occupational tool for a significant number of workers, known as occupational voice users, including teachers, healthcare professionals, telemarketers, lawyers, journalists, singers, and so forth[1].

The direct health costs caused by dysphonia in the United States are estimated to reach US$13.5 billion[2]. Besides the financial impact, vocal problems in occupational voice users have negative consequences on the quality of life, hinder professional satisfaction, and affect social life[3]. Moreover, they have a different voice from the general population and more vocal complaints[4].

Thus, studies aiming to promote vocal health and prevent voice disorders are necessary to understand what measures can be taken with occupational voice users to reduce the number of cases of dysphonia and ensure this population's better communication conditions and quality of life.

Preventive health actions are interventions that aim to reduce the incidence and prevalence of a specific disease, such as dysphonia, preventing its emergence or evolution. Health promotion, on the other hand, is a broader concept, aimed at transforming living and working conditions, generating a better quality of life and overall well-being[5,6]. However, some authors use the terms as synonyms and apply health promotion in a fractional manner, which may be debatable from the perspective of public health[6]. Due to variations in the use of terms in the literature, both will be used throughout this review.

A systematic review[7] assessed the effect of vocal improvement on the voice quality of professionals who use it as a working instrument. However, no reviews have been found in the literature that analyzed the different types of dysphonia prevention approaches and their effects on occupational voice users.

Thus, given the importance of actions to promote vocal health and prevent voice disorders among different groups of occupational voice users, the analysis of such proposals in the literature can help specialists in replicating already tested actions and/or developing new proposals.

Therefore, this scoping review aimed to characterize actions applied to occupational voice users to promote their vocal health and/or prevent voice disorders.

METHODS

This scoping review was based on the guidelines of the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols – extension for scoping reviews (PRISMA-ScR)[8].

The research question was, "What are the types of proposals for promoting vocal health and/or preventing voice disorders in occupational voice users, the scientific evidence on the proposals for promoting vocal health and/or preventing voice disorders in occupational voice users, and their results?".

The articles were selected between June 2021 and September 2023 from the SciELO and PubMed databases. The descriptors "voice", "voice disorders", "dysphonia", "prevention and control", and "health promotion" were combined in a search key for the PubMed database [(health promotion) AND (voice)) OR ((voice disorders) AND (prevention and control)) OR ((dysphonia) AND (prevention and control))]. It was applied in June 2021 and September 2023 and identified 1,714 articles.

The equivalent descriptors in Portuguese were combined in a search key for the SciELO database [((prevenção de doenças) *AND* (disfonia)) *OR* ((prevenção de doenças) *AND* (distúrbios da voz)) *OR* ((prevenção de doenças) *AND* (voz)) *OR* ((promoção da saúde) *AND* (voz))]. It was likewise applied in June 2021and September 2023 and identified 78 studies.

Figure 1 describes the selection stages. The articles in the databases were initially identified by the first author. These were added to the EndNote software (Clarivate Analytics, PA, USA), which eliminated duplicates. Once this stage was completed, the articles were screened by the first two authors by reading titles and abstracts, excluding those that were not related to the research topic. Then, they were evaluated in full text by two researchers, individually, according to the eligibility criteria. If there were any divergences between the evaluators, the text was discussed according to the criteria to reach a consensus. Hence, 18 studies were included in the qualitative synthesis.

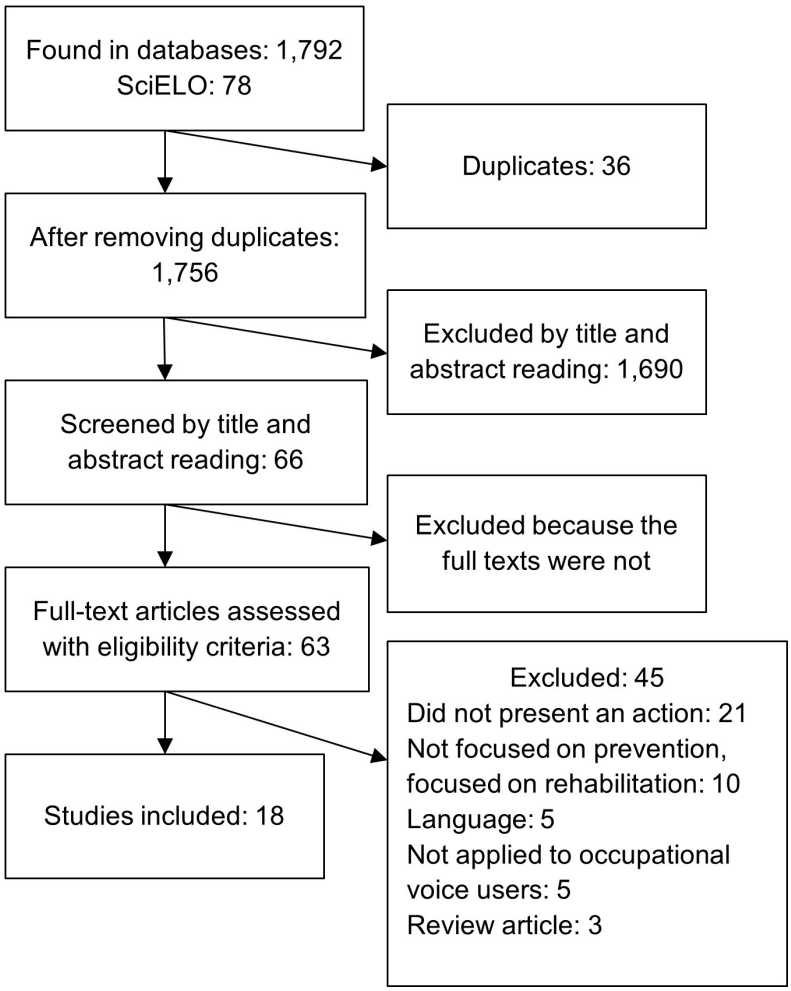

Figure 1. Article selection stages

The review comprised studies that met the following inclusion criteria: published in English or Portuguese, with the description of at least one proposal for preventing dysphonia or promoting voice health, applied to occupational voice users, and published in 2010 or later. PCC acronym parameters (population, concept, and context) were defined to select the articles (Chart 1).

Chart 1. Study eligibility

	Inclusion criteria
Population	Occupational voice users who were not undergoing treatment for vocal problems simultaneously with the prevention proposal.
Concept	Proposals for dysphonia prevention or health promotion focused on professional voices, carried out in groups or individually, directly or indirectly, with high or low technology resources.
Context	Studies that described the proposal and evaluated it using some tool – e.g., self-perception analysis, quality of life or voice before and after applying the proposal, and comparison of different groups.
Types of sources of evidence	Electronic databases containing peer-reviewed journals covering national and international publications published since 2010.

The exclusion criteria were review articles, editorials, intervention studies exclusively for treatment/rehabilitation, and articles not available in full text.

The articles were tabulated in a specific database for data mapping, considering their origin, year of publication, type of study, participants (number; occupation, including whether they were interns or not; age; sex; length of experience; and whether they had vocal changes), objectives, intervention (type, duration, procedures, and resources used), result analysis method, results, and conclusions.

The articles were also grouped into categories according to the type of proposal and participants, actions in primary healthcare (to promote vocal health in vocally healthy professionals and/or prevent voice disorders) and specialized care (secondary or tertiary; of medium and high complexity; assistance to professionals with vocal impairments; and prevention of vocal problem relapses)[9]. Studies could be grouped into just one or more than one type of prevention.

Data were presented descriptively, according to the analysis criteria.

LITERATURE REVIEW

Four of the 18 articles included in the review were retrieved from the SciELO database, and the other 14 were from PubMed.

The division of the period encompassed in the review into 2010 to 2016 and 2017 to 2023 shows a growth in the number of publications in the last years – six articles were from that first period and 12 are from the second period.

Moreover, no studies were published from 2020 to July 2021 that met the research eligibility criteria. Considering this period as the initial year of the COVID-19 pandemic and its peak with the great mobilization of the scientific community to understand the effects of this event, there may have been a decrease in publications aimed at prevention and health promotion. Future studies should consider this assumption and newly tested search criteria.

Table 1 describes the characterization of the selected articles. They covered the following occupations: teachers (in 16 studies), actors (in one study), and singers (in one study). Also, five articles included intern teachers (university students who worked as intern teachers), while the other ones had only professionals in the study population.

Table 1 also includes the minimum and maximum time of activity (in years) of nine studies, since only these described such information.

The predominance of teachers as the target for voice disorder prevention proposals indicates concern about the high prevalence of voice disorders in this population[10]. Moreover, actors and singers, as representatives of the artistic voice, are important targets for prevention proposals, as they need greater vocal capacity because vocal changes directly impact performance in their careers, which also pose risk factors such as the high prevalence of inadequate lifestyles and vocal habits[11].

Among the studies that included vocally healthy participants, six included trained teachers, three were made up of intern teachers, one researched theater students, and another one researched singers. In studies that included professionals with vocal changes, one contained individuals with vocal nodules, and another one cited permanent vocal problems without specifying the type of change.

The terminology on dysphonia prevention and voice health promotion is not uniformly used nor clear in the literature. However, most studies focused on the concept of prevention, presenting practices or actions aimed at preventing the emergence or worsening of diseases[5]. The objective of the studies included in the review was to prevent dysphonia in occupational voice users – especially teachers, a group with the highest prevalence and incidence of this health condition.

Table 1. Characterization of the samples in the studies

Sample number			Participants per sex*				Mean time of activity (years)**		Participants with vocal changes		
Mean	Minimum	Maximum	Females		Males		Minimum	Maximum	No	Yes	Not specified
			Mean	Mean %	Mean	Mean %					
90	4	286	60	62,48%	19	19,9%	8,7	20	11	2	5

Captions: *Based on 18 articles, as one did not present this variable.
**9 of the 18 articles described this variable.

According to a study[12], health promotion is closely related to quality of life and takes a broad view of the health-disease process and its determinants, mobilizing different knowledge, agents, strategies, and resources to address and resolve them. Therefore, voice actions from this perspective should aim to improve the voice-related quality of life based on health determinants (including the subjects' social, economic, occupational, and behavioral aspects).

As this research focused on the promotion of vocal health and the prevention of voice disorders, the presence of a greater number of studies containing vocally healthy participants was expected, with half of these articles including professionals still in training. The development of preventive actions with future occupational voice users during their training is a strategy to raise awareness and avoid the emergence of vocal changes. Such actions stimulate self-perception of aspects that help make vocal production safer and more comfortable and avoid risk factors from the beginning of their career before there is an increase in their vocal demand, resulting from their professional activities[13,14].

The presence of five studies that did not specify the inclusion of participants with or without vocal problems indicates that such actions do not always assess the voice for diagnosis or self-assessment[15]. Nonetheless, it is necessary to use clear inclusion and exclusion criteria, as this allows us to (a) know the sample for which the results were obtained, (b) deepen the analyses in certain study groups, and (c) compare the results. In this sense, pre-intervention instruments can be used to help identify vocal changes – e.g., protocols and scales that measure and characterize vocal signs and symptoms, quality of life, and other biopsychosocial aspects that impact the voice.

Most actions took place in groups, in person, and at the participants' workplace. Instructions on vocal hygiene and vocal health were present in 17 studies. These are considered preventive-therapeutic programs, whose main objective is the behavioral change of habits that are harmful to the voice[16,17]. Vocal hygiene strategies, in general, are presented in combination with exercises and other specific vocal techniques, combining direct and indirect approaches[16]. Chart 2 presents the prevention and promotion proposals for vocal health described in each article.

Chart 2. Characterization of the proposals to promote voice health and prevent voice disorders

Reference	Objective	Application	Topics approached
13	To investigate the effectiveness of a preventive vocal health training program for German student teachers.	In person, in groups (10 to 12 people), and educational institutions. They were carried out in eight 90-minute sessions.	VH, voice functioning, posture, breathing, appropriate tone of voice during speech, vocal intensity, resonance, articulation, and prosodic elements.
14	To evaluate the usefulness of a targeted VH program compared to VH + VT for the prevention and treatment of voice problems in student teachers.	In-person with online monitoring; in groups (2-hour seminar on VH) and individually (10 to 15-minute meeting with each participant). The VT took place in 8 sessions.	VH: hydrating, controlling exogenous inflammation, and avoiding screaming. VT: aimed at an abducted laryngeal configuration.
15	To present an action to promote the vocal health of teachers within the scope of primary healthcare.	In person, in groups, at the workplace. Six fortnightly workshops (from 40 minutes to 1 hour).	Guidance on VH, vocal production, and vocal techniques.
16	To investigate the effects of a vocal education program on primary school teachers in the Persian education system.	In person, in groups, at the workplace. They were carried out in 8 weekly sessions of 1 hour each.	VH program, monitoring the application of learned practices.
18	To investigate the perception of the use of voice as a work tool and instrument of artistic expression, in a choir of preschool teachers.	In person, in groups, and at the places where the rehearsals and presentations took place. Duration of 6 months.	Reflection on the artistic and occupational voice use, the influence of work organization on vocal health, vocal health, and time management.
19	To investigate the immediate effects of a VW and VC program as a strategy to protect teachers' voices in the teaching context.	In person, in groups, at the workplace. 13-minute session with VW and 7-minute VC exercises.	VW: stretching, speech articulation exercises, breathing, mucosal relaxation, and resonance. VC: stretching, resonance, and glottal source.
20	To investigate the impact of a group vocal health promotion program for popular singers without vocal impairment.	In person, in groups, at the workplace. Seven meetings were held.	Guidance on the physiological anatomy of the vocal tract, VH care, and vocal exercises.

Reference	Objective	Application	Topics approached
21	To longitudinally assess the impact of voice-based educational activities on teachers' quality of life.	In person, in groups, at the workplace. A lecture on VH and 4 meetings every 15 days for vocal exercises.	Guidance on VH and vocal improvement exercises.
22	To test an online telepractice model for the prevention of voice disorders in healthy student teachers through measurements acquired with a mobile application.	Online, individually, on a smartphone application. Twice a day for 5 days a week, over 4 weeks. The voice was recorded with the application.	Guidance on VH and self-monitoring measures.
23	To determine the effectiveness of a voice care program among Malaysian teachers.	In person, in groups, at the workplace. Four 30-minute sessions.	Individual voice amplification, VH instructions, and voice amplifier journal.
24	To examine the effects of a short-term VT program for teachers.	In person, in groups; 25-hour course (in total), delivered over 8 weeks.	Lecture, posture education workshop, mindfulness, and traditional VT and VH techniques.
25	To explore the effectiveness and applicability of the Lax Vox method as a preventive voice program for healthy teachers.	In-person, individual. Three weekly sessions of 60 minutes each and practice 3 times a day for 12 minutes.	VW and VC using Lax Vox.
26	To investigate the effectiveness of a holistic VT program designed for theater students.	In person, in groups; 12 weekly sessions of 30 to 45 minutes.	Basic vocal anatomy, physiology, and VH education. VT: breathing, posture, relaxation, VW, resonance, and voice projection.
27	To define and implement a preventive vocal health program for university professors.	In person, in groups, or individually. Different actions were carried out for each level of prevention (primary - 1, secondary - 2, and tertiary - 3).	1 - personal habits and VH. 2 - vocal techniques for tone and volume control plus primary prevention guidelines. 3 - vocal re-education (relaxation exercises and breathing techniques) plus guidance on levels 1 and 2.
28	To determine the effect of an online vocal health and stress reduction program implemented at a Colombian university during the COVID-19 pandemic.	Online synchronously, individually. Four 45-minute weekly virtual sessions were held. Upon completion of the program, professors had access to all course material.	Improvement of working conditions, stress management, recommendations for voice care and vocal training (VW, VC, laryngeal relaxation, and breathing exercises), and promotion of healthy lifestyle habits.
29	To determine the effect of a Vocal Health Promotion Program at the Workplace and working conditions on the vocal functioning of university professors.	Blended, individual, with 4 sessions lasting 45 minutes each (2 remote and 2 in-person sessions) over 4 weeks. Participants should practice VT exercises at home.	VH, VT, and modifications in teaching-learning strategies in classrooms.
30	To evaluate the usability and acceptability of the "Health and Voice" application in promoting the vocal health of elementary school teachers.	Online, individual. Participants used the application and immediately answered the questionnaires.	General knowledge about voice, myths and truths, game associating acquired knowledge, guidelines for reducing the environmental impact on the voice, and basic vocal anatomy and physiology.
31	To evaluate the long-term effectiveness of a vocal training program for teachers in Lower Saxony, Germany.	In person, in groups, at the workplace. Each training session lasted 2 days, including 8 classes of 1.5 hours each.	Vocal techniques and individualized guidance for each teacher (aimed at modifying behaviors related to the professional use of the voice). The teachers' specific working conditions were discussed, such as vocal stress, room acoustics, and noise reduction.

Captions: VH – vocal hygiene; VT – vocal training; VHI – Voice Handicap Index; VW – vocal warm-up; VC – vocal cool-down.

The articles included in the review use the terms vocal hygiene (most found in the international literature), vocal health, vocal well-being, and vocal care as synonymous. Some authors do not recommend the commonly used term vocal health since health is understood as a non-separable condition[5,6,32]. However, this is a recurring term in articles in the area and a concept known by professionals, which supports the maintenance of its use.

As for health prevention levels, 13 articles[13,15,16,18-22,25-29,31] (72.22%) were categorized in primary healthcare. These studies included only healthy voices or those without diagnosed changes, with a focus on preventing the emergence of changes. Four studies[14,23,24,30] (22.22%) were located in primary and specialized secondary care. These proposals aimed at prevention, rehabilitation, and vocal improvement. One article[27] (5.56%) involved primary and specialized secondary and tertiary care. It presented proposals that encompassed healthy and changed voices with the need for specific intervention to prevent the emergence of changes and/or improve and/or reduce the chance of relapses in vocal changes[12].

It is important to highlight that, despite addressing different healthcare levels, all studies presented actions that covered primary care. This demonstrates a concern increasingly focused on avoiding dysphonia and promoting adequate vocal use in occupational voice users.

Vocal improvement is a broad concept, including primary care strategies to prevent and, consequently, reduce the risk of future vocal problems[16,33]. However, the literature uses this concept interchangeably with the term vocal therapy[7] (which corresponds to the treatment of voice disorders)[16,34] because both practices use the same techniques[7]. Hence, vocal improvement can be understood as a set of techniques that can be used to prevent voice disorders and optimize or rehabilitate the voice.

Regarding programs and resources, 13 studies included vocal improvement proposals, two studies used applications, one article adopted a voice workshop, and one study used voice amplifiers. The main objective of one of the articles[18] was to investigate preschool teachers' perception of voice use through choir and drama. In this study, the action was not proposed by the researchers (this chorus and drama group emerged spontaneously from the community); however, they analyzed its applicability, as it became an action to prevent and promote vocal health. The authors considered this to be an efficient strategy to promote vocal health.

The analysis of actions to promote and prevent voice disorders also addressed the non-inclusion of learned strategies[17,34]. In this sense, the use of applications and digital/technological tools as part of vocal prevention proposals indicates the possibility of more flexible time, space, and availability of occupational voice users. Consequently, this may lead to the subjects' greater participation. Thus, such resources have been encouraged in the area and deserve attention for future proposals[30,35,36].

Concerning the effectiveness of proposals, the studies used various methodologies. Thirteen articles compared groups – 10 of them[13,16,19-21,23,24,26,28,29] had an experimental (EG) and a control group (CG). Also, two studies[14,22] compared two EGs with different interventions and a CG (one of them analyzed the difference between in-person and remote intervention, and the other one compared an intervention providing vocal hygiene instructions with an intervention using the same instructions associated with vocal improvement techniques). One study[27] compared three EGs at different levels of prevention using different interventions. The main variables used for comparison between groups were questionnaires (validated ones, such as the Voice Handicap Index – VHI and Voice-Related Quality of Life – VRQL, or developed by the authors), acoustic analysis (fundamental frequency – f0, jitter, shimmer, and so on), and auditory-perceptual evaluation (mainly using the GRBAS or CAPE-V protocol).

Two studies[25,31] compared before and after intervention, analyzing self-assessments and auditory-perceptual, acoustic, and aerodynamic aspects of the voice.

Two studies performed cross-sectional analyses[15,30] based on a questionnaire developed by the authors to obtain the participants' vocal history and perception of the interventions.

Lastly, one study performed qualitative analysis[18] and used a field journal to analyze the following topics: the artistic and occupational voice use, how work organization influences teachers' vocal health, how teachers/singers take care of their vocal health, different ways of managing time, different roles, and self-care.

The studies were classified by level of evidence, according to their design (Table 3), and based on the pyramid of scientific evidence presented by Murad et al. (2016)[37] and translated by Behlau et al. (2022)[38]. Most articles were classified in levels 2 (highest level

of evidence, as they are experimental studies) or 5 (demonstrating a considerable amount of quasi-experimental studies that analyzed the effectiveness of vocal health prevention or promotion proposals based on assessments before and after the intervention.

The differences and variations in the design and use of various assessment protocols hindered a meta-analysis. Nevertheless, the 18 studies had a positive trend regarding their results (Table 3). The professionals improved in aspects such as self-perception of voice, the quality of voice and life, and awareness of positive and harmful voice habits. However, more studies are needed to evaluate their application and effectiveness in the long run and at work.

Chart 3. Results of the articles included in the review

Summary of the results of the articles included in the review		Level of evidence*
Reference	**Results**	
13	There was an improvement in VQ and vocal capacity, despite an increase in subjective voice strain, which suggests an increase in self-perception.	2
14	For initially healthy participants, the VH program prevented VHI scores from worsening. For participants with low initial VHI scores, the VH program failed to produce benefits, and VT was needed to optimize results.	2
15	Eighty percent of teachers reported an improvement in their professional performance, and 93.3% said they would continue performing the exercises, but pointed out the lack of time as the main difficulty in performing them routinely.	6
16	There was a significant improvement in EG's VHI scores, while CG's worsened.	5
18	Choir and drama (art and music) can be an efficient strategy to promote vocal health and adopt lifestyles that allow for self-care.	3
19	EG and CG did not differ in the intragroup analysis. However, in the intergroup analysis, VW improved QoL and reduced the degree of body discomfort; VC decreased both f0 and the degree of discomfort. The results indicate potential protection for teachers' voices.	5
20	It was effective according to the singers' perception of their vocal production and there was a greater reduction in the percentage of complaints from EG than from CG.	5
21	Teachers had greater mastery and overall V-RQOL scores in both CGs and EGs. However, there was no statistical difference in scores between groups.	2
22	In the preliminary analysis, f0 and jitter (%) demonstrated changes in the voice comparing before and after applying the prevention model, in face-to-face and remote practice.	2
23	After the intervention, a significant effect was observed on the Malay-VHI-10 total scores, which supports the use of voice amplifiers along with VH as a prevention and treatment modality.	2
24	Teachers' voice performance improved after 25 hours of training in acoustic level, f0, and frequency disturbance measures, as well as subjective voice assessment using the VHI.	5
25	The results suggest improvement in selected measures of QoL, MPT, vocal function, self-assessment, and perceived applicability, with good adherence to routine.	7
26	There was an increase in EG participants' knowledge about VH. QoL in CG worsened, while no changes were found in EG. The auditory-perceptual evaluation showed improvements in EG's grade of hoarseness and roughness.	2
27	The authors comment positively on their results, despite the focus of the study remaining on the division of groups into primary, secondary, and tertiary prevention, pointing out that the method used in the study can be applied to other occupational voice users.	4
28	The results demonstrate a reduction in the perception of vocal fatigue and an improvement in pneumo-phono-articulatory coordination, measured with the Vocal Fatigue Index and MPT.	5
29	EG showed an increase in V-RQOL scores compared to CG, but the effect was not statistically significant. After the program, the shimmer decreased and MPT and HNR increased in EG.	2
30	The authors concluded that the application is effective in promoting vocal health for teachers, as it has high acceptability and usability, in addition to increasing knowledge about VH.	6
31	Ninety-three percent of teachers implemented VT into their daily professional lives, and these behavioral changes led to better vocal capacity and performance. However, teachers at higher risk of voice disorders still had high rates of impact of self-reported voice problems after VT.	5

Captions: EG – experimental group; CG – control group; VW – vocal warm-up; VC – vocal cool-down; VQ – voice quality; VHI – Voice Handicap Index; VH – vocal hygiene; V-RQOL – Voice-Related Quality of Life; f0 – fundamental frequency; VT – vocal training; MPT – maximum phonation time; HNR – harmonics-to-noise ratio.
* Based on the pyramid of evidence by Murad et al. (2016), translated by Behlau et al. (2022).

When planning an action to promote vocal health or prevent voice disorders, the feasibility of such an initiative must be taken into account, seeking more flexible and low-cost means for greater adherence to the action and considering the needs and expectations of professionals targeted by these actions[15,16,30,34].

The present study has limitations. Few categories of occupational voice users were covered, which limits the generalization of the results. This factor may be related to difficulties with terminologies and concepts (e.g., "health promotion", "prevention", and "vocal improvement") used differently in each study, possibly influencing the selection of articles. It is suggested that groups of specialists linked to universities, in partnership with the Voice Department of the Brazilian Speech-Language and Hearing Society, approach such terminology and propose standardized and homogeneous terms for occupational voice users and scientists to use in research.

Even so, the analysis of these studies brought important contributions to the understanding of what has been done to prevent voice disorders in occupational voice users in recent years. This will be useful for clinicians to select methods and resources in their practice and encourage the replication of already applied and tested methodologies aiming for more robust comparative data.

This study also sheds light on the terminological complexity and reinforces the need to standardize terms related to the topic[39]. Furthermore, the findings reinforce the need to replicate actions already proposed and tested on varied samples of occupational voice users, which would enable future meta-analyses. The results also serve as a basis for scientific evidence on the effectiveness of actions to promote vocal health and prevent dysphonia.

Lastly, further studies are needed, aimed at promoting vocal health and preventing voice disorders with standardized terminologies. It is also necessary to compare the different ways of carrying out these actions (in person or remotely and using different types of resources) to improve future actions, aiming for greater effectiveness and positive results in interventions.

CONCLUSION

The proposals covered different levels of healthcare, but most of them focused on preventing dysphonia, including vocally healthy participants.

The actions described in the literature included teachers, singers, and actors and were mostly carried out in groups, in person, and at the participants' workplace. However, individual proposals are also described, developed remotely or in a mixed way, with in-person meetings and remote monitoring.

The majority used combined direct and indirect approaches, with guidance on vocal hygiene associated with vocal exercises, described as part of vocal improvement or voice workshops. Voice amplifiers and applications were used as technological resources.

All articles indicated positive results in vocal self-perception, quality of voice and life, and awareness of positive and harmful voice habits.

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