



Auditory-perceptive analysis and self-perception of the voice in evangelical pastors

Análise perceptivo-auditiva e autopercepção da voz em pastores evangélicos

Análisis perceptivo-auditivo y autopercepción de la voz en pastores evangélicos

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Abstract

Objective: verify the association between vocal quality and vocal complaint with variables, gender, age, ministry time, working hours, vocal parameters and vocal self-perception in evangelical pastors. **Method:** descriptive, analytical study of cross-sectional design. Sample of 52 religious, aged 20 to 69 years; 38 men and 14 women, average of 8 hours of work, between 1 and 32 years of ministry. Pastors were included, between 20 and 69 years in ministerial exercise and excluded stutterers or those who had a cold. Procedures: recording the voices of the participants, with the sustained vowel / a /, the days of the week and the reading of a random excerpt from the book of psalms of the Holy Bible. Then three speech therapists, specialists in voice and by consensus performed auditory perceptible analysis of the voice. There was also a questionnaire with identification of sociodemographic data and self-perception of the voice and aspects of speech in public. Descriptive data analysis and the Pearson Qui Quadrado and Fisher Exact association tests were performed. The level of significance was set at $p \leq 0.05$ (5%).

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Authors' contributions:

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Results: vocal quality was assessed as altered in 47.2% of the sample, with slight alteration degree of 41.5%. The other vocal parameters pitch, articulation, loudness, resonance and speech velocity were considered adequate in most of the sample. 78.85% of the pastors showed a good self-perception of speech in public, 52% self-perceived the voice as reasonable and most 76.9% reported vocal complaints of tiredness and hoarseness after voice use, almost all pastors (92, 5%) said they are able to maintain attention and influence the listener when speaking in public. There was an association of vocal complaints with the male gender ($p < 0.001$), age range of 39 to 58 years ($p < 0.001$) and professionals using the voice from 5 to 8 hours per day ($p < 0.001$). The other variables were not associated with the complaints. There was an association of altered vocal quality ($p < 0.034$) with age ranging from 39 to 58 years, degree of mild vocal alteration ($p < 0.001$) with altered resonance ($p < 0.001$), pitch ($p < 0.003$) and self-perception of speech in public ($p < 0.001$) adequate. **Conclusion:** most evangelical pastors report vocal complaints of vocal fatigue and hoarseness, after the use of professional voice, more incident in males, between 39 and 58 years, in pastors who use the voice from 5 to 8 hours a day. Almost half of them present altered voice quality, associated with this same age group, with altered resonance. Pitch and self-perception of speech in public adequate.

Keywords: Speech therapy; Voice; Religious; Voice disorders.

Resumo

Objetivo: verificar a associação entre a qualidade da voz e queixa vocal com as variáveis, gênero, idade, tempo de ministério, horas de trabalho, parâmetros vocais e autopercepção vocal em pastores evangélicos. **Método:** estudo descritivo, analítico de delineamento transversal. Amostra de 52 religiosos, entre 20 a 69 anos; 38 homens e 14 mulheres, média de 8 horas de trabalho, entre 1 a 32 anos de ministério. Foram incluídos pastores ou pastoras, entre 20 a 69 anos, em exercício ministerial e excluídos pastores gogos ou que estivessem resfriados. Procedimentos: gravação das vozes dos participantes, com a emissão da vogal sustentada /a/, dos dias da semana e a leitura de um trecho aleatório do livro de salmos da Bíblia Sagrada. Em seguida, três fonoaudiólogas especialistas em voz, e por consenso, realizaram análise perceptivo auditiva da voz. Houve também aplicação de um questionário com identificação dos dados sociodemográficos e autopercepção da voz e de aspectos da fala em público. Foi realizada análise descritiva dos dados e os testes de associação Qui Quadrado de Pearson e Exato de Fisher. O nível de significância adotado foi de $p \leq 0,05$ (5%). **Resultados:** a qualidade vocal foi avaliada como alterada em 47,2% da amostra, com grau de alteração leve 41,5%. Os demais parâmetros vocais *pitch*, articulação, *loudness*, ressonância, velocidade de fala foram considerados adequados na maioria da amostra. 78,85% dos pastores mostrou uma boa autopercepção da fala em público, 52% autoperceberam a voz como razoável e a maioria, 76,9%, relatou queixas vocais de cansaço e rouquidão após o uso da voz; quase todos os pastores (92,5%) disseram que são capazes de manter a atenção e influenciar o ouvinte ao falar em público. Houve associação das queixas vocais com o gênero masculino ($p < 0,001$), faixa etária de 39 a 58 anos ($p < 0,001$) e com profissionais que utilizavam a voz de 5 a 8 horas por dia ($p < 0,001$). As demais variáveis não se associaram com as queixas. Houve associação da qualidade vocal alterada ($p < 0,034$) com a faixa etária de 39 a 58 anos, grau de alteração vocal leve ($p < 0,001$) com a ressonância alterada ($p < 0,001$), *pitch* ($p < 0,003$) e autopercepção da fala em público ($p < 0,001$) adequados. **Conclusão:** a maioria dos pastores evangélicos apresenta relato de queixas vocais de cansaço vocal e rouquidão após o uso da voz profissional, mais incidente no sexo masculino, entre 39 a 58 anos, nos pastores que usam a voz de 5 a 8 horas por dia. Quase metade deles apresenta qualidade de voz alterada, associada a esta mesma faixa etária, com alteração da ressonância. *Pitch* e autopercepção da fala em público adequados.

Palavras-chave: Fonoaudiologia; Voz; Religiosos; Distúrbios da voz.

Resumen

Objetivo: determinar la asociación entre la calidad de la voz y las quejas vocales contando con las variables, género, edad, ministerio de tiempo, horas de trabajo, los parámetros de voz y auto vocal - percepción de los pastores evangélicos. **Método:** diseño descriptivo, transversal analítico. Muestra 52

religiosa entre los 20 y los 69 años; 38 hombres y 14 mujeres, media de 8 horas de trabajo, entre 1 a 32 años de ministerio. Foram mensurados pastores e pastoras entre los 20 y los 69 años en ejercicio y pastores ministeriales, excluido os gagos o se lo enfiarion. Procedimientos: la grabación de las voces de los participantes, con el emisión de la vocal / a / sostenida, días de la semana y la lectura de un pasaje al azar del libro de los Salmos de la Biblia. En seguida tres fonoaudiólogas, expertos en la voz y en consenso realizaron un análisis perceptivo auditivo de la voz. También fue la aplicación de un cuestionario para identificar los datos sociodemográficos y la autopercepción de la voz y los aspectos del habla en público. El análisis descriptivo se realizó y los datos se asociación a prueba Pearson chi - prueba exacta cuadrado y Fisher. El nivel de significación se fijó en $p \leq 0,05$ (5%). **Resultados:** la calidad vocal fue evaluada como alterada en el 47,2% de la muestra, con un grado de alteración leve del 41,5%. Los otros parámetros de tono vocal, articulación, sonoridad, resonancia, velocidad de la voz se consideran adecuados en la mayor parte de la muestra. 78.85% de los pastores mostraron una buena percepción del habla en el, 52% autoperceberam a voz pública como razonable y más del 76,9% de voz quejas reportadas de la fatiga y ronquera, después de que el uso de la voz, casi a los pastores (92,5%) dizeram que son capaces de mantener la atención e influir en el oyente al hablar en público. Hubo asociación de queja de vocês con el gênero malo ($P < 0,001$), edad 39-58 años ($p < 0,001$) y profesionales utilizan para la voz de 5 a 8 horas por día ($p < 0,001$). Las otras variables no se asociaron con la quejas. Hubo una asociación de la calidad de voz modificada ($p < 0,034$) en el grupo de edad 39-58 años grado alteración de la voz Light ($p < 0,001$) con la resonancia alterada ($p < 0,001$), tono ($p < 0,003$), y la percepción pública de expresión ($p < 0,001$) adecuados. **Conclusión:** La mayoría de los pastores evangélicos informa quejas vocales de fatiga vocal y ronquera, después de que el uso de la voz professional es más común en los hombres, entre 39 y 58 años, los pastores que usan sus voces 5-8 horas al día . Casi la mitad de ellos ha alterado la calidad de voz, asociado a este mismo grupo de edad, cambiando la resonancia. Tono y la percepción del habla en público adecuado.

Palabras clave: Terapia del habla; Voz; Religiosos; Trastornos de la voz.

Introduction

Evangelical pastors or priests can be considered professionals of the voice, since they depend on the voice as a working tool to exercise the religious ministry¹⁻⁴. They conduct religious services, and use their voice in several activities, such as individual counseling, lectures, meetings, baptisms, marriages, and social projects. Some of them make radio and television programs and also sing, at different times and in different ways^{2,5-8}.

With the great vocal demand, they experience situations of intensive use of the voice that can generate vocal disorders^{2,7,9,10}. The literature indicates that a late diagnosis of vocal complaints or voice alterations in this population may result in the appearance of laryngeal lesions, increasing the risk of withdrawal from activities and possible involvement of the religious ministry⁷.

Concerning the vocal aspects of speech in public, authors argue that for each profession there is a preferred voice, determined by specific vocal traits and a characteristic psychodynamic. They describe

that traditional catholic or evangelical religious tend to present fluid voice, balanced resonance, adequate or reduced speech speed, with repetitive modulation and use of significant pauses, related to a vocal psychodynamic of reason, balance and tranquility¹¹.

In this way, the voice for evangelical pastors is an essential working tool for establishing a direct communication with the faithful. However, most of them do not perform a vocal preparation or have specific vocal counseling for this purpose¹. Therefore, we believe that scientific studies with this population will contribute to the construction of more scientific knowledge about the subject and consequent improvement of the speech-language pathology.

For that reason, the objective of this study was to verify the association between vocal quality and vocal complaints with variables: gender, age, ministry time, working hours, vocal parameters and vocal self - perception in evangelical pastors.

Method

This is a descriptive, analytical, and cross-sectional study approved by the Research Ethics Committee, 52595415600005149. The sample consisted of 52 evangelical pastors from a Baptist church in the city of Belo Horizonte, 38 men and 14 women, aged between 20 to 69 years, who worked in the ministry for 1 to 8 hours and had between 1 and 32 years of ministerial experience.

The criteria of inclusion were being a pastor and participating in a ministry in the church where the study was conducted, also have between 20 and 69 years. Pastors with stuttering, who did not have Portuguese as their mother tongue or who had flu, were excluded on the day of data collection.

The study took place on three different stages. In the first stage, the voices of the participants were recorded, with the issuing of the sustained vowel / a /, with the days of the week and the reading of a random excerpt from the book of psalms from the Holy Bible: "You are my shepherd, nothing I will not fail: he maketh me to lie down in green pastures, he leadeth me beside the still waters: he maketh my soul refreshed: he leadeth me in the paths of righteousness for his name's sake."

The voices were recorded with the individual standing, and the microphone positioned at 45° and 10 cm from the participant's mouth. The equipment used was: notebook ASUS X200MA Intel Celeron N2830 2.16 GHz 2048 MB 500 GB, Shure® S microphone Vokal dynamic K15 Professional unidirectional. A decibel meter was used to measure the room noise level in order to minimize external noise pickup during recording, which was controlled around 50 dB for all recordings. Audacity Portable ^{2.1.2} was used to record voices.

In the second stage, a small questionnaire was used, built by the researchers with questions identifying the participants: name, age, pastoral working experience and working hours; questions about self-perception of vocal parameters were divided into poor, reasonable, and good; two questions about being able to keep the listener's attention

and influence others with public speaking, as well as self-perception of vocal fatigue and hoarseness, which described whether the participant had these vocal complaints after professional voice use. The third part was composed by hearing-perceptual analysis of participants' voices. Voice analysis was performed by consensus, by three speech therapists with more than five years of clinical experience and who evaluated the type of voice between neutral or altered; the degree of change; if the pitch is adequate or altered, with subdivisions to be classified as inappropriate, between low and high; adequate or altered resonance with subdivisions between predominantly oral, laryngopharyngeal, pharyngeal or laryngeal resonance; loudness if appropriate or altered, with option of classification, increased or reduced; adequate or altered articulation, between accurate, imprecise, overlaid or exaggerated speech and adequate or altered speech speed, between reduced or increased speech, and divided speech, good, reasonable and poor.

For the analysis of the data, the information obtained was allocated in a digital database and analyzed later. The hearing-perceptual data were analyzed using SPSS Software version 20.0, using the Pearson Chi-square test and Fisher's exact test. The level of significance was set at $p \leq 0.05$ (5%).

Results

Table 1 shows the descriptive data of the study. The vocal quality was evaluated as altered in 47.2% of the samples, with a slight alteration degree of 41.5%. The other vocal parameters pitch, articulation, loudness, resonance, speech velocity were considered adequate in most of the sample. 78.85% of the pastors showed a good self-perception of speech in public, 52% self-perceived the voice as reasonable and the majority 76.9% reported vocal complaints of tiredness and hoarseness after voice use. Almost all pastors (92.5%) believe they are able to maintain attention and influence the listener when speaking in public.

Table 1. Data descriptive analysis about the hearing-perception and self-perception of the voice

Variables	N	%
Voice quality		
Adequate	28	52.80
Altered	24	47.20
Alteration degree		
Normal	28	52.80
Slight	22	41.50
Moderate	2	5.70
Severe	0	0.00
Pitch		
Adequate	46	77.40
High		9.40
Low	6	13.20
Articulation		
Adequate	37	71.70
Inaccurate	13	24.50
Exaggerated	2	3.80
Overlaid	0	0.00
Loudness		
Adequate	37	71.70
increased	6	11.30
Reduced	9	17.00
Resonance		
Adequate	32	60.40
Altered	20	39.60
Speech Speed		
Adequate	39	75.50
Increased	4	7.50
Reduced	9	17.00
Self-perception in public speech		
Good	41	78.85
Reasonable	11	21.15
Self-perception of the voice		
Good	22	40.40
Reasonable	28	52.00
Poor	2	7.60
Tiredness and hoarseness after voice use		
Yes	40	76.90
No	12	23.10
Self-perceives that maintain the listener attention		
Yes	48	92.50
No	4	7.50
Self-perceives that influences the listener		
Yes	48	92.50
No	4	7.50

N= number of subjects

The association between vocal complaints and the variables of the study is presented in Table 2. There was a relation of vocal complaint with the masculine gender ($p < 0.001$), age group of 39 to

58 years ($p < 0.001$) and professionals who used the voice from 5 to 8 hours per day ($p < 0.001$). The other variables were not associated with the vocal complaint.

Table 2. Association between vocal complaints, socio-demographics data, vocal parameters and vocal self-perception.

Variables	Vocal complaints		P Value	
	No n (%)	Yes n (%)		
Gender	Male	6 (50.0)	32 (80.0)	0.040*
	Female	6 (50.0)	8 (20.0)	
Age	18-38 years	4 (33.3)	5 (12.5)	0.046**
	39-58 years	4 (33.3)	29 (72.5)	
	59-69 years	4 (33.3)	6 (15.0)	
Ministry time	1-10 years	8 (66.6)	19 (47.5)	0.503
	11-21 years	3 (25.0)	15 (37.5)	
	22-40 years	1 (8.3)	6 (15.0)	
Worked hours	0-2 hours	8 (66.6)	11 (27.5)	0.032**
	3- 5 hours	3 (25.0)	13 (32.5)	
	5-8 hours	1 (8.3)	16 (40.0)	
Vocal quality	Altered	4 (33.3)	20 (50.0)	0.31
	Neutral	8 (66.6)	20 (50.0)	
	Slight	3 (75.0)	19 (95.0)	
Alteration degree	Moderate	1 (25.0)	1 (5.0)	0.32
	Severe	0 (0.0)	0 (0.0)	
Pitch	Altered	6 (8.3)	5 (12.5)	0.692
	Adequate	6 (91.7)	35 (87.5)	
Resonance	Altered	2(25.0)	18 (42.5)	0.274
	Adequate	9 (75.0)	23 (57.5)	
Loudness	Altered	3 (25.0)	12 (30.0)	0.737
	Adequate	9 (75.0)	28 (70.0)	
Articulation	Altered	4 (33.3)	11 (27.5)	0.696
	Adequate	8 (66.6)	29 (72.5)	
Speech speed	Altered	3 (25.0)	10 (25.0)	0.100
	Adequate	9 (75.0)	30 (75.0)	
Voice self-perception	Good	4 (33.3)	18 (45.0)	0.573
	Reasonable	7 (58.3)	21 (52.5)	
	Poor	1 (8.3)	1 (2.5)	
Self-perception in public speech	Good	11 (91.7)	31 (77.5)	0.572
	Reasonable	1 (8.3)	9 (22.5)	
Self-perceives that maintain the listener attention	Poor	0 (0.0)	0 (0.0)	0.246
	Yes	11 (91.7)	37 (92.5)	
Self-perceives that influences the listener	No	1 (8.3)	3 (7.5)	0.254
	Yes	12 (100)	36 (90)	
	No	0 (0.0)	4 (10.0)	

Pearson's Chi-square test, ** Fisher's exact test significant at 5%.

Table 3 shows that there was an association of altered vocal quality ($p < 0.034$) with age range from 39 to 58 years, degree of mild vocal alteration ($p < 0.001$), altered resonance ($p < 0.001$), adequate pitch ($p < 0.003$) and adequate perception of speech in public ($p < 0.001$).

Table 3. Association between vocal complaints, socio-demographics data, vocal parameters and vocal self-perception

Variables	Vocal Quality		P value	
	Altered %	Neutral %		
Gender	Male	17 (72.0)	21 (75.0)	0.805
	Female	7 (28.0)	7 (25.0)	
Age	18-38 Years	1 (4.0)	8 (28.6)	0.034**
	39-58 years	19 (80.0)	14 (50.0)	
	59-69 years	4 (16.0)	6 (21.4)	
Ministry time	1-10 years	14 (56.0)	13 (46.4)	0.546
	11-21 years	8 (36.0)	10 (35.7)	
	22-40 years	2 (8.0)	5 (17.9)	
Worked hours	0-2 hours	8 (32.0)	11 (39.3)	0.196
	3- 5 hours	10 (44.0)	6 (21.4)	
	5-8 hours	6 (24.0)	11 (39.3)	
Alteration degree	Neutral	0 (0.0)	28 (100)	< 0.001**
	Slight	22 (88)	0 (0.0)	
	Moderate	2(12.0)	0 (0.0)	
	Severe	0 (0.0)	0 (0.0)	
Pitch	Altered	6 (28.0)	0 (0.0)	0.003**
	Adequate	18 (72.0)	28 (100.0)	
Resonance	Altered	19 (76.0)	1 (7.1)	< 0.001**
	Adequate	6 (24.0)	26 (92.9)	
Loudness	Altered	10 (40.0)	5 (17.9)	0.071
	Adequate	15 (60.0)	22(82.1)	
Articulation	Altered	6 (28.0)	8 (28.6)	0.963
	Adequate	18 (72.0)	20 (71.4)	
Speech speed	Altered	7 (32.0)	6 (17.9)	0.232
	Adequate	17 (68.0)	22 (82.1)	
Voice self-perception	Good	12 (47.8)	10 (34.5)	0.720
	Reasonable	10 (47.7)	18 (62.0)	
	Poor	1 (4.5)	1 (3.5)	
Self-perception in public speech	Good	14 (56.0)	28 (100.0)	< 0.001**
	Reasonable	10 (44.0)	0 (0.0)	
	Poor	0 (0.0)	0 (0.0)	
Self-perceives that maintain the listener attention	Yes	21 (88.0)	27 (96.4)	0.246
	No	3 (12.0)	1 (3.6)	
Self-perceives that influences the listener	Yes	24 (100.0)	24(89.3)	0.356
	No	0 (0.0)	4 (10.7)	

Pearson's Chi-square test, ** Fisher's exact test significant at 5%.

Discussion

The voice is a necessary tool for communication for priests and pastors, through which they convey religious principles and transmit the word of God¹. For them, voice is important for the religious ministry and the quality of this work and communication tool, such as microphone, is strongly recommended, as prevention of grievances in the voice, since lack of knowledge and vocal care generate voice problems, which can result in withdrawal from activities².

Concerning vocal quality, we observed presence of alteration in almost half of the pastors (47.2%) characterized by the light degree in 41.5%. A study that evaluated the vocal profile of evangelical pastors of traditional and Pentecostal churches reported that most pastors had a voice alteration¹⁶. Other studies have shown prevalence of vocal problems among priests^{8,10,15,17} which was not lower than the prevalence of changes in teachers, considered the professionals with the most voice problems¹⁷.

Our study shows that most of the pastors presented vocal complaints of vocal fatigue and hoarseness after the use of voice. Self-reported symptoms reinforce the importance of assessing vocal fatigue, which is common in cases of vocal alterations, associated with voice use and high demand in professional voice¹². Studies have confirmed that there are reports of vocal complaints by most pastors^{6,7,13,14} and some show hoarseness in half of evangelical pastors^{7,14}. Among the priests, the incidence of vocal complaints is also high¹⁵.

We believe that the data found in our research warn of possible vocal problems in religious, highlighted here by the presence of vocal complaints related to vocal fatigue and hoarseness, after the use of professional voice and altered vocal quality data in almost half of the sample of the study.

Hoarseness is one of the most common symptoms in dysphonia, and it is present in cases of behavioral dysphonia, vocal abuse or inappropriate use of the voice^{12,18}. However, the diagnosis of dysphonia includes a multidimensional vocal evaluation that includes reporting the patient's complaint; assessment of laryngeal pattern; acoustic and perceptual assessments of the voice, besides the impact of the voice to the quality of life of the subject^{18,19,20}. These evaluations were not performed

in this study and we suggest that future research contemplate this multidimensionality.

Note that although most evangelical pastors report vocal fatigue and hoarseness after using voice, half of them self-rated their voices positively and most believe they are able to capture, maintain attention, and influence the listener. A study with pastors also states that despite the vocal alteration, the pastors considered their voices satisfactory to the craft¹⁶.

Authors argue that the traditional evangelizers present expressive speech that transmits a reassuring psychodynamic, with intonation that is not variable, severe, mild, speaking speed with a tendency to be reduced and use of pauses¹¹. Other studies found that despite the presence of vocal complaints and signs of dysphonia, pastors consider their voice to be good and report satisfaction with their own voice, despite showing a perception of vocal exhaustion^{2,13}.

We believe that slight changes in voice quality do not negatively impact the ability to influence the listener or the ability to catch his attention. However, we have argued that a clinical evaluation or counseling of these professionals is indicated, since the perception of discomfort for the speaker was an aspect self-reported, as negative, in this research and is relevant in the clinical history of an individual^{18,21}.

We also observed that men presented more vocal complaints than women. Studies show that although there is already some research with female pastoralists,^{6,15,22} the majority of individuals who carry out the religious pastoral ministry are still men^{2,7,14} and that they have a significant prevalence of vocal problems^{7,8}.

In relation to age, there was an association of vocal complaints with the age range of 39 to 58 years. The vocal complaints in other studies were more prevalent or incidental between the ages of 23 to 53 years and 20 to 50 years, close to our study, except for the earlier incidence of voice problems reported in the other studies.

As for the number of hours of voice use, pastors who used their voice between 5 to 8 hours a day reported more vocal complaints. Many pastors with vocal complaints used their voice for 6-10 hours in their pastoral activities¹⁴. A study carried out with pastors indicates that the accumulation of functions can considerably influence the use of voice¹⁴.

However, changes in vocal behavior due to misuse and / or abusive use of voice added to environmental factors need to be better investigated in future studies, since voice problems are multifactorial^{18,25}. Table 3 shows that there was an association between altered vocal quality and degree of mild alteration. Another study with religious men pointed out that 70% of the evangelical pastors of four different churches had a mild to extreme degree of change^{16,23}.

The hearing-perceptual analysis of voice is used regularly in clinical practice for subjectively and reliably translating aspects related to vocal quality^{18,24} but a multidimensional evaluation is always indicated, as already discussed.

In our study, there was an association between altered vocal quality and altered resonance. Authors point out that evangelical pastors use their voice in high intensity, do not use a microphone for vocal amplification and end up using the voice alteredly^{2,14} with presence of resonance altered in most pastors¹⁴.

Adequate pitch prevailed in pastors with altered vocal quality (Table 3). Our hypothesis is that since vocal quality changes were mostly mild, they would not cause pitch change. In one study with seminarians, half of those evaluated, despite vocal problems, also had adequate pitch²⁶.

As final considerations, we believe that the aspects that encompass the voice of the evangelical pastor are many and involve the use of voice, the environment, vocal preparation and the great demand for voice. This entire context impels an increasingly customized and directed clinical action to this population, vocal health promotion actions are encouraged with the aim of guiding voice care, minimizing the aggravation of laryngeal lesions and improving speech in public.

Conclusion

Most evangelical pastors report vocal complaints of vocal fatigue and hoarseness, after the use of professional voice, more incident in males, between 39 and 58 years, in pastors who use the voice from 5 to 8 hours a day. Almost half of them present altered voice quality, associated with this same age group, with altered resonance. Pitch and self-perception of speech in public are adequate.

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