



Health, vocal sensations, otorhinolaryngologic diagnosis and teachers' time of vocal use

Saúde geral, sensações vocais, diagnóstico
otorrinolaringológico e tempo de uso vocal
de professores

Salud general, sensaciones vocales,
diagnóstico otorrinolaringológico y tiempo
de uso vocal de profesores

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Abstract

Objective: Verify and correlate health data, vocal sensations, otorhinolaryngologic diagnosis and time of vocal use at work of a group of teachers from a medium-sized city in the state. **Methods:** Participated 25 teachers of both genders (22 women and three men) aged between 24 and 61 years. The responses to the identification questionnaires, anamnesis and vocal self-assessment and otorhinolaryngologic diagnosis were analyzed through statistical analysis. **Results:** Prevalence of: negative vocal sensations - secretion in the throat and / or phlegm (60%), voice failures (52%), dry mouth and / or throat (48%) and fatigue

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(44%); presence of laryngeal disease - vocal nodules (20%), vasculodysgenesis (12%), triangular glottic slit grade II (12%), fusiform slit (8%) and supraglottic hyperconstriction (8%); rhinitis and sinusitis reference, especially in teachers with laryngeal disease. There was no correlation among variables. **Conclusion:** The negative vocal sensations, the presence of laryngeal disease and the presence of the rhinitis and sinusitis reference predominated; there is no relationship among the vocal sensations, age and/ or time of vocal use at work.

Keywords: Faculty; Voice Disorders; Otorhinolaryngologic Diseases; Work Hours; Surveys and Questionnaires.

Resumo

Objetivo: Verificar e correlacionar dados de saúde geral, sensações vocais, diagnóstico otorrinolaringológico e tempo de uso vocal no trabalho de um grupo de professores de uma cidade de porte médio do interior do estado. **Método:** Participaram 25 professores de ambos os sexos (22 mulheres e três homens) com idades entre 24 e 61 anos. Analisaram-se as respostas aos questionários de identificação, anamnese e de autoavaliação vocal e os diagnósticos otorrinolaringológicos através de análises estatísticas. **Resultados:** Houve predomínio de: sensações vocais negativas - secreção na garganta e/ou pigarro (60%), falhas na voz (52%), secura na boca e/ou garganta (48%) e fadiga (44%); presença de afecção laríngea - nódulos vocais (20%), vasculodisgenesia (12%), fendas triangulares grau II (12%), fendas fusiformes (8%) e hiperconstricção supraglótica (8%); referência de rinite e sinusite, principalmente em professores com afecção laríngea. Não houve correlação entre as variáveis estudadas. **Conclusão:** Predominaram as sensações vocais negativas, a presença de afecção laríngea e a referência à presença de rinite e sinusite, não havendo relação entre a presença de sensações vocais, idade e/ ou tempo de uso da voz no trabalho.

Palavras-chave: Docentes; Distúrbios da Voz; Otorrinolaringopatias; Jornada de Trabalho; Inquéritos e Questionários.

Resumen

Objetivo: Comprobar y correlacionar los datos de salud general, sensaciones vocales, diagnóstico otorrinolaringológico y tiempo de uso vocal en el trabajo de un grupo de profesores de una ciudad de tamaño mediano en el estado. **Métodos:** Participaron 25 profesores de ambos sexos (22 mujeres y tres hombres) con edades entre 24 y 61 años. Se analizaron las respuestas de los cuestionarios de identificación, anamnesis y autoevaluación vocal, y el diagnóstico otorrinolaringológico, a través del análisis estadístico. **Resultados:** Hubo predominación de: sensaciones vocales negativas - secreción en la garganta y / o carraspera (60%), fallos de voz (52%), sequedad de boca y / o de garganta (48%) y fatiga (44%); presencia de enfermedad de laringe - nódulos vocales (20%), vasculodysgenesia (12%), ranuras triangulares grado II (12%), ranuras en forma de huso (8%) y hyperconstriction supraglótica (8%); referencia de rinitis y sinusitis, principalmente en los profesores con enfermedad de laringe. No hubo correlación entre las variables estudiadas. **Conclusión:** Predominaron las sensaciones vocales negativas, la presencia de enfermedad de laringe y la referencia a la presencia de rinitis y sinusitis; no existe relación entre la presencia de sensaciones vocales, edad o tiempo de uso de la voz en el trabajo.

Palabras claves: Docentes; Transtornos de La Voz; Enfermedades Otorrinolaringológicas; Horas de Trabajo; Encuestas y Cuestionarios.

Introduction

The voice is the main teacher's working tool and through it, it transmits his knowledge and experience to the student and communicates with other professionals. It needs also a clear and flexible voice of communicative competence in order to attract the attention of students. If the voice pattern of preschool teachers is inadequate it may be configured in a negative vocal model for the child, as the teacher has an influential role in the life of it. Many factors interfere in vocal production of this professional, especially when they are not prepared for the intense and prolonged use of the voice^{1,2}.

The teaching population has been the subject of many studies on the professional voice, since they represent a group of workers more likely to develop voice disorders in relation to other professionals²⁻⁵. This finding is due to the intense and prolonged vocal use in combination with other factors such as long working hours, lack of access to knowledge about vocal health, cervical muscles hypertension, body posture and breathing pattern inadequate to the professional vocal use, lack of vocal rest, noisy environment, dry air, smoke, temperature changes, large numbers of students in the classroom (requiring the use of voice in higher sound pressure), rooms with poor acoustics, age, gender, allergic, respiratory and hormonal problems, hereditary characteristics, behavioral and lifestyle^{2,6-9}.

Due to this set of elements, teachers tend to adopt a vocal pattern with increased loudness and acute exacerbation frequency and are common to the emission effort reports, hoarseness, little resistance and pain when speaking, variation in the usual fundamental frequency, coughs, larynx infections and complete loss of voice^{6,10}. These features make teachers the voice professionals more susceptible to laryngeal disorders (LD) as edema, polyps, cysts and vocal nodules and also aphonia^{2,7,8}. Still, the teacher fits into a significantly large class of workers and the whole rehabilitation process generates high financial costs; so, the society is affected as a whole by the occurrence of dysphonia in teachers^{1,7}.

It is very important that teachers learn how to recognize the symptoms of vocal abuse early, by subjective aspects as the vocal sensations of hoarseness, pain, vocal fatigue, among others, in order to avoid future dysphonia that may result in absence from work. A departure by voice disorder can cause personal, social and economic injury as

it interferes in the professional activity, necessary for the exchange of knowledge between teachers and students. The vocal symptoms usually appear slowly, get worse over time and can lead to laryngeal lesions. In the latter case, a disease with lesions of the vocal folds can complicate and prolong the treatment of teacher as well as increase the time off from the classroom, bringing losses also to the school and students, in addition to own physical and psychological wear^{8,9,11}.

Besides the damage to vocal emission, dysphonia causes a strong psycho-emotional impact, it also can threaten, short or even end the teaching career, forcing to get away from work or change jobs. And the process becomes even more stressful when the professional needs to justify and support his medical license because the vocal disorders are not legally recognized as an occupational disease⁷.

The impact of dysphonia in the patient's life is individual and does not always correspond to the severity of the disorder, because it depends on several factors, including professional use, or not, of the voice^{3,12}. The perception of the teacher about that impact can be measured through self-assessment protocols that help to relate subjective aspects (self-awareness) and goals (professional assessment) measuring the perception of the subject about their disease and quality of life^{3,13}.

Thus, this study aimed to verify and correlate general health data, vocal sensations, otorhinolaryngologic (ENT) diagnosis and time of vocal use at work of a group of teachers of both genders in a medium-sized city.

Methods

Bioethical Issues

This work was constituted in a cross-sectional study, quantitative and retrospective in the database, previously approved by the Ethics Committee on Human Research of the Universidade Federal de Santa Maria (23081.016945/2010-76).

The target population consisted by teachers of both genders of a medium-sized city in the state, that teach in any level of education. The subjects were invited to participate in a previous research that originated the database through e-mail, research dissemination in university sites, language courses and unions of municipal teachers. The

interested parties were invited to read and sign the Informed Consent (IC) as the standard 466/2012 of the National Research Ethics Commission.

Inclusion and exclusion criteria for the composition of the sample

The inclusion criteria for this study were: be a teacher of any grade level of public and private networks of the city, be female or male; the range of ages between 19 and 65, absent the period of vocal changes and presbyphonia.

The exclusion criteria were: physical education teacher, singing, music, sign language teacher, support rooms or perform administrative activities, to present different organizational characteristics of the physical work environment and vocal demand; be on leave period; presenting self-reported history of neurological diseases, because they could influence the vocal performance or understanding of the requested tasks; during pregnancy, the menstrual or premenstrual; present alcohol consumption habits and / or smoking; have done prior speech treatment and / or ENT related to voice; and hearing loss by interfering in voice self-monitoring.

All subjects target that signed the consent form underwent anamnesis and hearing screening with audiometer Fonix FA 12 Digital Electronics Frye (United States) and these data were used for the application of the inclusion and exclusion criteria.

Finally, the study sample comprised 25 teachers, 22 women and three men, aged between 24 and 61 years (mean 37.84 years). Four subjects were lost for not presenting complete data in the database.

Data collection and analysis

The responses were analyzed to identify questionnaires and anamnesis, which contained questions related to voice use time at work and general health, and self-assessment protocol of vocal sensations answered by the subjects. The latter was a closed protocol that encouraged self-assessment of voice and had the following options: pain to speak, clear voice, muscles loose, voice with noise, presence of secretions in the throat or phlegm, good voice projection, thin voice, weak voice, frequent voice loss, burning, fatigue to speak, loose voice, "dirty" voice, tense muscles, voice failures, thick

voice, or "other"^{14,15}. The development of this protocol was based on the literature, the negative and positive sensations were randomized to not induce the answers and teachers could point out how many wanted options^{14,15}.

Responses were classified as "positive sensations" (loose / clear voice to speak, realizes projection voice, loose muscles) and "negative sensations" (sensation of secretion in the throat and phlegm, foreign body sensation in the throat, dry mouth and / or throat, thin voice, thick voice, weak voice, voice failures, fatigue to speak, pain to speak, "dirty" voice, tense muscles, noise in voice, weary voice at the end of the day, frequent voice loss)^{6,11,16}.

The data on time use of voice at work were subdivided in: daily use of voice, weekly hours of voice use and years of use of voice at work^{1,5,6,8,17}. The time of daily voice use at work was also rated at up to eight hours or more than eight hours⁵.

Later, were analyzed the ENT diagnosis issued after conducting videolaryngostroboscopy that used *Atmos* device (*Lenzkirch*, Germany) with optical *Storz 70°* (*Tuttlingen*, Germany) to check the laryngeal conditions of the subjects. The examinations were performed and recorded by a single otorhinolaryngologist, and volunteers remained seated, with the head slightly tilted forward and upward, being asked to sustained vowels /e/ and /i/, and two emissions of phonation reverse. For tabulation purposes, medical diagnoses that were found in group data that composed the sample were classified into absent LD, which included the individuals diagnosed with regular larynx and women with triangular glottic slit grade I; LD with organofunctional alteration or anatomical inadaptation of the vocal folds, with the diagnosis of vocal fold nodules and vasculodysgenesis and LD unchanged organofunctional or anatomical inadaptation of the vocal folds with fusiform slit, triangular glottic slit grade II and supraglottic hyperconstriction diagnostics. Further, for the data analysis was carried out the distribution of the ENT diagnosis in presence or absence of LD, and, in the presence of LD, with or without organofunctional LD or anatomical inadaptation.

Finally, the data were statistically analyzed to verify the significance and correlation and subsequent comparison of the results with the literature. The statistical tests used were: Mann-Whitney, Equality of Two Proportions, Chi-square and

Spearman correlation, with significance level of 5% ($p \leq 0.05$).

Results

Table 1 shows the descriptive analysis of quantitative variables vocal sensations, age, daily use of voice, weekly hours of voice use and years of use voice at work.

Table 2 displays the correlation of vocal sensations with age and time of use of voice at work. It was found that there was no statistically significant correlation between positive vocal sensations and / or negative with age or time of use of voice at work.

In Table 3, the time of daily voice use at work was classified in up to eight hours or more than eight hours and the two groups were compared to positive and negative vocal sensations, and there was no statistically significant difference.

Table 1. Full descriptive analysis of the variables: vocal sensations, age, daily voice use, weekly hours of use of voice and years of use of voice at work

Descriptive	Mean	Standard Deviation	Min	Max	n
Positive vocal sensations	0,52	0,59	0	2	25
Negative vocal sensations	4,20	2,38	1	11	25
Age (years)	37,84	10,20	24	61	25
Daily use of voice at work (hours)	7,94	3,20	3	16	25
Weekly hours of use of voice at work (hours)	33,76	10,12	9	44	25
Years of use of voice at work (years)	11,70	10,94	0,5	42	25

Descriptive analysis

Legend: Min = minimum value found; Max = maximum value found

Table 2. Correlation of vocal sensations with age and time of use of voice at work

		Positive vocal sensations	Negative vocal sensations
Age (years)	Corr (r)	12,1%	-16,4%
	p-value	0,565	0,434
Daily use of voice at work (more or less than 8 hours)	Corr (r)	-23,1%	-7,5%
	p-value	0,266	0,720
Weekly working time (hours)	Corr (r)	-20,5%	-6,7%
	p-value	0,325	0,750
Working time (years)	Corr (r)	15,5%	-27,8%
	p-value	0,460	0,178

Spearman Correlation Test ($p \leq 0,05$)

Legend: Corr = correlation

Table 3. Comparison between time daily use of voice at work and the vocal sensations

Daily use of voice at work (hours)	Mean	Standard Deviation	n	p-value	
Positive vocal sensations	Up to 8h	0,59	0,62	17	0,427
	More than 8h	0,38	0,52	8	
Negative vocal sensations	Up to 8h	4,18	1,88	17	0,615
	More than 8h	4,25	3,37	8	

Mann-Whitney Test ($p \leq 0,05$)

Legend: h = hours

Table 4 shows the distribution of the ENT diagnosis of presence or absence of LD, and in the presence of LA, with or without organofunctional LD or anatomical inadaptation. There was no statistical significance in both distributions.

Tables 5 and 6 show the comparison between ENT diagnosis and type of LD with voice use time

variables at work, with no statistically significant differences.

Table 7 shows the relation of the ENT diagnosis with general health data. It was found that there was no relation between ENT diagnosis and general health, but rhinitis was the most frequently reported disease.

Table 4. Distribution of otorhinolaryngologic diagnosis and the type of laryngeal disorder

ENT diagnosis and type of LD	n	%	p-value
Absence of LD	11	44,0%	0,396
Presence of LD	14	56,0%	
LD with OF alteration or AI	8	57,1%	0,450
LD without OF alteration or AI	6	42,9%	

Equal Test of Two Proportions ($p \leq 0,05$)

Legend: ENT = otorhinolaryngologic; LD = laryngeal disorder; OF = organofunctional; AI = anatomical inadaptation

Table 5. Comparison of otorhinolaryngologic diagnosis and time of vocal use at work

ENT diagnosis		Mean	Standard Deviation	n	p-value
Daily use of voice (more or less than 8 hours)	Absence of LD	7,73	3,23	11	0,617
	Presence of LD	8,11	3,28	14	
Weekly working time (hours)	Absence of LD	36,36	6,74	11	0,608
	Presence of LD	31,71	11,99	14	
Working time (years)	Absence of LD	11,64	12,55	11	0,763
	Presence of LD	11,75	9,99	14	

Mann-Whitney Test ($p \leq 0,05$)

Legend: ENT = otorhinolaryngologic; LD = laryngeal disorder

Table 6. Comparison of the type of laryngeal disorder and time vocal use at work

Type of LD		Mean	Standard Deviation	n	p-value
Daily use of voice (more or less than 8 hours)	With OF alteration or AI	9,13	3,72	8	0,194
	Without OF alteration or AI	6,75	2,19	6	
Weekly working time (hours)	With OF alteration or AI	29,38	13,38	8	0,282
	Without OF alteration or AI	34,83	10,13	6	
Working time (years)	With OF alteration or AI	12,00	8,82	8	0,796
	Without OF alteration or AI	11,42	12,27	6	

Mann-Whitney Test ($p \leq 0,05$)

Legend: LD = laryngeal disorder; OF = organofunctional; AI = anatomical inadaptation

Table 7. Relation of otorhinolaryngologic diagnosis with general health data

		LD with OF alteration or AI		LD without OF alteration or AI		Without LD		p-value
		n	%	n	%	n	%	
Tonsillitis	No	7	88%	5	83%	10	91%	0,899
	Yes	1	13%	1	17%	1	9%	
Asthma	No	6	75%	5	83%	9	82%	0,910
	Yes	2	25%	1	17%	2	18%	
Pharyngitis	No	6	75%	6	100%	11	100%	0,099
	Yes	2	25%	0	0%	0	0%	
Gastritis	No	8	100%	6	100%	9	82%	0,251
	Yes	0	0%	0	0%	2	18%	
GER	No	7	88%	5	83%	11	100%	0,409
	Yes	1	13%	1	17%	0	0%	
Rhinitis	No	2	25%	3	50%	5	45%	0,567
	Yes	6	75%	3	50%	6	55%	
Sinusitis	No	5	63%	5	83%	9	82%	0,554
	Yes	3	38%	1	17%	2	18%	

Chi-square Test ($p \leq 0,05$)

Legend: GER = gastroesophageal reflux; LD= laryngeal disorder; OF = organofunctional; AI = anatomical inadaptation

Discussion

In this study, as well as other researches^{2,6,8,17} on teachers' voice, there was a predominance of females in the sample. Women are in greater number in the teaching profession in almost all educational levels and show significant reference of vocal symptoms¹⁷. Moreover, women has more predisposition to the occurrence of voice disorders due to anatomical and physiological factors such as anatomical configuration of the larynx, the proximity of the fundamental frequency (f_0) with the child's voice and the accumulation of activities that causes physical and psychological wear, which may contribute to the appearance of voice disorders¹⁷.

In the descriptive analysis of the vocal sensations, predominated negative over the positive (Table 1), and the most mentioned were secretion in the throat and / or phlegm (60%), voice failures (52%), mouth and / or throat dryness (48%) and fatigue (44%). A recent study¹⁸ also found, as proprioceptive vocal symptoms more reported by teachers, dry throat and effort to speak, that is evidence of vocal abuse, lack of hydration and excessive tension during speech. These vocal symptoms, added to the overload of classes and inadequate conditions of environmental and work, contribute to the appearance of negative vocal sensations and inflammatory processes, and assist in

the development of an occupational disease^{1,6,9,11,18}. It is also worth noting that these symptoms may be related to other aspects such as jaw opening limitation (occurring overload of the larynx in voice production) and or lack of rest⁹.

In analysis⁶ also held with teachers, vocal sensations of vocal fatigue and dry throat were the most mentioned with prevalence of 54.55% and 53.41%, respectively, added hoarseness with 44.32%. Accordingly, to another research¹ it shows prevalence of 77.3% for dry throat, 50% for the vocal sensations of weary voice and phlegm and 50% for hoarseness. From these results, it is evident that hoarseness is one of the most frequent perceptive-auditory vocal aspects of the complaints in teachers, even measured by different instruments⁹, suggesting the presence of noise and instability in the glottal signal.

Another study¹¹ also showed the sensations of "voice loss" with 20%, burning in the throat with 43.3% and "breaking voice", in this study is equivalent to "voice failures", with 28.3% but in similar researches¹⁹, vocal sensation "breaking voice" obtained indices of 42.5%. Among the factors contributing to these vocal sensations, there is the lack of hydration and overloaded classes, associated with inadequate conditions of environment and work^{1,6,11,18}.

Although there was no significant correlation between negative or positive vocal sensations with age (Table 2), the literature shows that the complaint of fatigue to speak is related to increasing age, since there is a great probability of presence of gap glottic, among other anatomical changes, that affect the phono respiratory coordination and favor the onset of symptom^{20,21}. Perhaps it did not occur in the present study because of the not participation of teachers over the age of 61, when the vocal and laryngeal changes of aging are more evident²¹.

It is important that the teacher knows how to recognize the negative vocal symptoms early in order to avoid a future vocal disorder that can deviate him from his professional activities or bring personal, social and economic losses. A survey¹⁶ conducted with 438 Colombians teachers with vocal complaints showed that the majority (69%) reported productivity loss of self-awareness in the previous month to the research due to their voice complaints. Around 25% reported having sought medical attention for their vocal complaints and 7% reported missing work because of voice problems in the past.

However, not always the teachers reported symptoms that interfere with their vocal quality, as the impact of dysphonia depends on individual characteristics, and many times it is not related to the severity of the vocal disorder²². It is important to note that the organofunctional or functional dysphonia, with greater or lesser degree of participation of vocal behavior, usually indicate longstanding vocal change, and the sensations cannot be referred by patients because of a habituation process²³.

According to the results obtained in this study, the number of negative sensations not related to the time of voice use at work (Tables 2 and 3), that is, those who had higher daily or weekly hours of voice use at work showed greater awareness of the changes in their voice or number of complaints, contradicting the initial hypothesis that vocal sensations would be worse for those who used the voice at work over eight hours. This data is consistent with a research with call center operators, in which the number of working hours and the percentage of use of the voice is not related to the perception of voice disorders²⁴.

Another recent survey with college teachers found that the percentage of hoarseness, considered one of the vocal sensations more commonly

referred to^{5,9}, is lower for teachers with maximum working hours of up to three hours of class compared to other workloads (four to six hours of class, six to eight hours and more than eight hours of class)⁵.

An investigation²⁵ with 42 teachers, with female predominance and median eight and a half hours of teaching time, found that the most commonly reported symptoms were vocal sensation of dryness in the throat (66.6%) and hoarseness (40.4%) and, although the study population presented symptoms of vocal complaints, the professional use of time voice had not compromised the quality of life related to voice, referred by teachers themselves. These results are similar to this research, as well as the negative vocal symptoms reported, as the lack of correlation between the time in the teaching profession (average 11,7 years and a median of eight years) and vocal sensations (Tables 1 and 2). A recent study² also found average time of use of professional voice similar to this study, with a value of 12,57 years among those surveyed teachers.

About the ENT diagnosis (Table 4), 11 teachers did not show LD and 14 were diagnosed with the presence of LD. In individuals with LD, eight had LD with organofunctional alteration or anatomical inadaptation with predominance of vocal nodules (20%) and vasculodysgenesis (12%) (Table 4). In the six teachers with LD without organofunctional alteration or anatomical inadaptation, there was a predominance of triangular glottic slits grade II (12%), fusiform slits (8%) and supraglottic hyperconstriction (8%) (Table 4). However, there was no significant predominance of ENT diagnosis or type of LD.

In a survey²⁶ with 17 teachers, there were found similar results to the present study. The teachers were subjected to laryngeal evaluation and 13 obtained diagnosis of LD, and in 47% of reports there was a predominance of vocal nodules, vocal fold cysts or glottic slits. Yet, another work that reviewed the existing literature on voice disorders in teachers found a higher occurrence of vocal nodules or vocal fold polyps in this population²⁷.

Of the five teachers diagnosed with the presence of vocal nodules in the current work, all were female. The high occurrence of vocal nodules in women is linked to biological factors such as the size and glottal proportion and lower hyaluronic acid level, a protein that attracts water to the lamina

propria of mucosa's vocal folds, resulting in decreased trauma's surface during an emission sound^{8,28}.

In the correlation of the variable time of vocal use at work in years and ENT diagnosis of LD (Table 5), there was no statistically significant relation, data that go against to work⁸ that found that the variable "working as a teacher for more than seven years "remained associated with the medical diagnosis of pathology of the vocal folds", as well as the use of the voice intensively, being female, referring more than five unfavorable characteristics of the work environment and having one or more of the respiratory tract diseases.

Regarding general health, a current study²⁹ found a prevalence of dysphonia associated with the diagnosis of respiratory problems (54%), a result similar to that found in another study⁸ where 26,1% of the diagnoses of respiratory tract diseases were associated with medical diagnosis of pathology of the vocal folds. In this study, of the eight subjects diagnosed with some kind of LD with organofunctional alteration or anatomical inadaptation, six mentioned rhinitis and three mentioned sinusitis and, of the entire sample, these were the most mentioned diseases (Table 7). Authors⁸ suggest that respiratory diseases stem from individual predispositions or desktop working environment. The exposure of the larynx to factors such as mold and chalk dust, which are commonly found in teachers' working environment, are irritant factors of the mucosa of the vocal folds and interfere in voice operation⁸.

Although many studies linking respiratory diseases with voice quality are not found, the literature shows that allergic disorders are the most frequent cause of extension of time of speech therapy and that some patients associate functional dysphonia by incorrect vocal use with an allergy or flu symptoms²⁸. Therefore, it is important that the teacher seeks the treatment for their allergies to avoid the worsening of dysphonia.

We point out the importance of developing actions that support the care for teachers' voice, professionals subject to present dysphonia with or without the presence of pathological vocal folds. This professional, presenting great vocal demand and using the voice often incorrectly, is a strong candidate to develop occupational dysphonia, precisely due to repetitive movements of the vocal folds and vocal unpreparedness and which, often, cannot even realize if his voice changed or not^{25,30}.

The unfamiliarity of vocal health by the majority of teachers, sometimes due to lack of access to information, results in incorrect vocal uses as compensatory measures in face of the difficulties they encounter^{2,9}. The speech therapy actions must, therefore, contain basic guidelines about incorrect vocal habits and health of the voice, hydration, techniques in warm up and unwarm of the voice, among other things.

This research intended to contribute to the literature directed to the vocal health of teachers to analyze the laryngeal condition detected in the ENT exam and relate it to age and vocal sensations of subjects, as well as the interference or not of the time of use of the voice in teaching.

It is suggested to carry out further studies on the topic, with larger samples, in order to increase the scientific evidence, generating greater concern among professionals responsible for vocal health and, thus, offer preventive actions in favor of teachers, avoiding or minimizing the occurrence of vocal disorders.

Conclusion

In the group of adult teachers of both sexes analyzed, there was no relation between the presence of vocal sensations, age, and/ or time of use of voice at work. However, there was a predominance of negative vocal sensations, stressing the secretion in the throat and / or phlegm, failures in voice, dryness in the mouth and / or throat and fatigue. The presence of LD was the most frequent, stressing the vocal nodules, the varicosity, triangular glottic slit grade II and fusiform and supraglottic hyperconstriction, and the LD with organofunctional alteration or anatomical inadaptation of the vocal folds. It predominated, yet, the reference of rhinitis and sinusitis, especially in teachers with LD.

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