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Original articles

Actor and drama students: voice related to practice

Atores profissionais e estudantes de teatro: aspectos vocais relacionados à prática

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ABSTRACT

Purpose: to identify and to compare the aspects related to professional practice, professional use of voice, vocal habits and care, habits of health and environment conditions at work in professional actors and students of theater.

Methods: participated 60 individuals males and females, divided in two groups: Professional Group – with professional actors of theatre and Students Group – with theatre students without professional experience. The both groups answered a questionnaire with aspects related to professional practice, aspects related to voice, vocal habits, habits of health and environment conditions and voice care.

Results: the Professional Group individuals presented higher occurrence of roughness than Students Group; higher occurrence of use professional voice when are flu, in inadequate respiration and inadequate corporal postures, screaming and remain in place with mold or poor ventilation, closed and dusty, and to perform testing in different place of the show. The habit of drinking cold was higher in Students Group than Professional Group. The number of the subjects without difficulty in scene and that realizes vocal warm-up is more significantly in Professional Group than Students Group. The type of warm-up realized significantly more frequently by Professional Group was sound of "s", costo-diaphragmatic breathing, "vocal fry" and "vowels sound".

Conclusion: it was observed that both groups realized harmful voice habits and are exposed in inadequate environments of work. These data highlight the necessity of vocal health actions, in order to minimize the risks of the vocal alterations and to prepare the students for the increase of vocal demand.

Keywords: Art; Health Evaluation; Occupational Health; Voice

RESUMO

Objetivo: identificar e comparar, em atores profissionais e estudantes de teatro, os aspectos relacionados à prática profissional, ao uso profissional da voz, hábitos e cuidados vocais, hábitos de saúde e condições ambientais no trabalho.

Métodos: participaram 60 sujeitos de ambos os sexos, subdivididos em 2 grupos: Grupo Profissional - atores profissionais de teatro e Grupo Alunos - alunos de teatro sem experiência profissional teatral. Ambos os grupos responderam a um questionário que abordou aspectos relacionados à prática profissional, à voz, hábitos vocais, de saúde, condições ambientais e cuidados vocais.

Resultados: os indivíduos do Grupo Profissional apresentaram maior ocorrência de rouquidão; maior ocorrência dos hábitos de usar a voz profissional quando está gripado, em posturas corporais e com respiração inadequadas, gritar, e permanecer em local com mofo ou pouca ventilação, fechado e empoeirado, e realizar ensaio em local diferente do local do espetáculo. O hábito de saúde de ingerir bebidas geladas foi maior no Grupo Alunos. O número de sujeitos que não possuem dificuldade em cena e que realizam aquecimento vocal é significantemente maior no Grupo Profissional. O tipo de aquecimento realizado significantemente mais pelo Grupo Profissional foi som de "s", respiração costo-diafragmática, som basal e vogais.

Conclusão: constatou-se que ambos os grupos realizam hábitos prejudiciais e estão expostos a ambiente de trabalho inadequado para saúde vocal. Estes dados apontam a necessidade de ações de saúde vocal, a fim de minimizar o risco de alterações vocais nos profissionais e preparar os estudantes para o aumento da demanda vocal.

Descritores: Arte; Avaliação em Saúde; Saúde do Trabalhador; Voz

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INTRODUCTION

Voice has a main role in communication and may also be used as an important work tool[1-10]. Drama actors, among the careers using voice professionally, have high risk to develop voice disorder due to work conditions and profession characteristics[9,11,12].

Several factors influence actor's voice as the voice resistance and plasticity needed to build the characters voice, the harmful voice habits, the improper environment, acoustic and climatic, conditions, and also some general and psychological health factors[9,13-16]. However these professionals are concentrating about the history, personality and character of their roles, so voice construction and health maintenance are secondary to the body work in the developed scene[16].

Some researches in Speech Language Pathology field have shown concern to vocal health and resources used by drama actors[9,16] because they live exhaustive routines that start on rehearsals and keep intense until the end of presentations season[13,17-20].

Nevertheless, the researches have been using actors that are using voice professionally[14-16,21], and there are not investigations of the factors related to voice of those who are still studying, whether in free drama courses or in graduation. The studies done with future voice professional from other fields have shown the beginning of symptoms and exposition to risk factors to dysphonia development since the graduation process, compromising performance even before professional exercise[22,23].

Therefore, to know the practice routine, the work environment and the voice health repercussion of actors and drama students is extremely important to support the clinician in planning and implant specialized actions and strategies to actor health and voice quality maintenance, fulfilling the communication requests of these professionals[16,19,20].

Hence, the purpose of the present study is to identify and compare actors and drama students regarding professional practice, voice and habits, health, environment conditions and health care.

METHODS

The cross-cut analytical observational and quantitative study was approved by the Ethic in Research Committee of *Universidade Tuiuti do Paraná* under the protocol number 00045/2008. The invitation to participate of the research was done in person by one of the researchers at the places actors work and in the drama schools of *Porto Alegre* city, *Rio Grande do Sul* state. The participants of the study were 60, 30 professionals (Professional Group - PG) and 30 students (Student Group - SG), all signed out the informed consent (IC).

Inclusion criteria to PG were: registered actors in the *Sindicato dos Artistas e Técnicos em Espetáculos de Diversão do Estado do Rio Grande do Sul (SATED)*, the local artists union, having degree in Drama and condition to perform professionally. The subjects that were not professional actors were excluded from PG.

SG was composed by students that declared not having previous experience on stage, excepting the course activities. The students reporting any previous experience as professional actor was excluded from SG.

The participants answered to a questionnaire with both closed and open questions, built by the researchers that were at disposal during the time of fulfilling the questions in order to clarify any possible doubts. The investigated data were:

1. Professional practice aspects – time as actor, current involvement in presentation, duration and days of week of presentation, duration of rehearsals – closed questions;
2. Voice aspects – identification of any current voice problem on daily basis and difficulty with voice on scene. To SG all the voice use on scene were related to voice use during classes – open questions;
3. Voice habits, health and environment conditions – voice habits: to use voice professionally during cold / flu, to imitate several sounds, to use voice in improper body postures, to speak loud, to hawk, to speak using improper breathing, to shout / yell, to speak while inhaling, to whisper, to cough frequently, and to speak using effort; health habits: to drink coffee, tea or *chimarrão* frequently, to drink cold beverages, to stay for long period without drinking water, to eat fat or spicy food before using voice professionally, to drink or eat chocolate before rehearsals/presentations, to drink alcoholic beverages, to smoke marijuana or cigars, to use controlled drugs, self-medication, and none of the options; environment conditions – to stay in places having mold or little ventilation, to stay in places with pollution or smoke, the use of air conditioning, heating, to be in closed places, dust places, to rehearse in places different from the presentation set, and to not use the microphone – closed questions.

4. Voice care – to perform vocal warm up and cool down exercises, to do exercises or other care that the subject report related to theater practice – open questions.

The data were analyzed statistically using chi-squared test, Fisher's exact test, and Equality of two proportions test, taking as significance level 5%.

RESULTS

Sample description

60 subjects both male and female participated in the study, with ages from 15 to 53 years, divided in two groups: PG – 30 professional actors (mean age 35.0 ± 9.0 years), 20 (66.7%) female, and ten (33.3%) male; SG – 30 drama students at the beginning of the course (mean age 24.4 ± 5.2 years), 19 (63.3%) female, and 11 (36.7%) male. There are no statistical differences regarding gender between groups (p=0.999).

According to the distribution of acting time most of the professionals of PG group had from seven to ten years of acting (n=11; 36.7%), followed by eleven or more years of acting (n=9; 30.7%), from four to six years of acting (n=8; 26.7%), and the minority were acting from one to three years (n=2; 6.7%). Data about the kind of graduation of PG were not collected.

Professional practice aspects

Among the subjects of the study most part of PG (n=28; 93.3%) was involved in some theater presentation with the mean duration of 67.3 minutes. From these ones, 46.6% (n=14) had presentations in three or four days of week.

43.3% (n=13) of SG subjects were preparing a presentation to the course. To most part of the subjects in PG (n=16; 53.3%) and also most part of SG, that were preparing a presentation, 16.6% (n=5), each rehearsal had duration from one to three hours per day.

Voice quality aspects

Table 1 shows significantly higher occurrence of voice disorders than the voice issues in SG (p=0.024).

The symptom of voice disorder most reported was roughness and the higher occurrence was in PG (Table 2).

Table 3 shows the number of subjects that do not have difficulty in scene is higher in PG than SG. There was no significant difference between the groups regarding the other difficulties reported: articulation, breathing, voice quality, projection, and others.

Table 1. Voice disturbances comparison between professional and student groups

Voice disorders	PG		SG		p-valor
	n	%	n	%	
Absent	17	56.6%	25	83.3%	0.024*
Present	13	43.3%	5	16.6%	

* Statistically significant results (p≤0.05) - Chi-Square test
Caption: PG= professional group; SG=student group; n=number of subjects; %=percentage of subjects

Table 2. Reported voice disturbance occurrence distribution in professional and student groups

Type of voice disturbance	PG		SG	
	n	%	n	%
Roughness	7	23.3	1	3.3
Aphonia	2	6.6	1	3.3
Vocal fold gap	1	3.3	0	0.0
Hoarseness or vocal fatigue	1	3.3	0	0.0
Hoarseness in teenage	1	3.3	0	0.0
Cannot reach high pitches	1	3.3	0	0.0
Low voice	0	0.0	1	3.3
Nasal voice	0	0.0	1	3.3
Vocal cyst	0	0.0	1	3.3

* Descriptive analysis
Caption: PG= professional group; SG=student group; n=number of subjects; %=percentage of subjects

Table 3. Type of voice trouble reported during scene occurrence distribution in professional and student groups

Type of voice trouble	PG		SG		p-valor
	n	%	n	%	
Articulation	12	25.5%	9	20.0%	0.613
Breathing	9	19.1%	10	22.2%	0.767
Voice quality	9	19.1%	6	13.3%	0.544
Projection	7	14.8%	16	35.5%	0.069
Others	1	3.3%	2	4.4%	NA
Nenhum	9	19.1%	2	4.4%	0.021*

* Statistically significant results (p≤0.05) - Fisher's exact test
Caption: PG= professional group; SG=student group; NA=not applicable; n=number of subjects; %=percentage of subjects

Voice habits, health and environment conditions

Regarding voice habits, there was higher occurrence of habits, as using voice while having cold / flu, during improper body postures, speaking without breathing, in PG than in SG. The habit of drinking cold beverages is significantly higher in SG than PG. To environment condition, PG reported significantly higher occurrence of the habit to stay in places having mold or little ventilation, closed places, dusty places, and rehearsing in places different form the presentation set (Table 4).

Voice care

There was significant difference between groups regarding vocal warm up, which were mainly performed by PG (Table 5). The type of vocal warm up more performed by PG was the sound /s/ and diaphragmatic breathing training, vocal fry, and sustained vowel (Table 6).

Table 7 shows there is no significant difference between the PG and SG regarding the perception of voice change after rehearsal or presentation (PG) or drama classes (SG).

Table 4. Reported voice, health habits, and environment conditions occurrence in professional and student groups

Habits present	PG		SG		p-valor
	n	%	n	%	
Voice habits					
To use voice professionally during cold	29	96.6	11	26.6	>0.001*
To imitate several sounds	21	70.0	14	46.6	0.071
To use voice in improper body postures	20	66.6	10	33.3	0.012*
To speak loud	19	63.3	17	56.6	0.598
To hawk	15	50.0	13	43.3	0.604
To speak using improper breathing	13	43.3	5	16.6	0.027*
To shout / yell	10	33.3	3	10.0	0.028*
To speak while inhaling	9	30.0	0	0.0	NA
To whisper	7	23.3	3	10.0	0.149
To cough frequently	6	20.0	4	13.3	0.365
Speak using effort	4	13.3	4	13.3	1.000
Health habits					
To drink coffee, tea or *chimarrão* frequently	24	80.0	18	60.0	0.096
To drink cold beverages	9	30.0	17	56.6	0.042*
To stay for long period without drinking water	8	26.6	9	30.0	0.771
To eat fat or spicy food before using voice professionally	7	23.3	7	23.3	1.000
To drink or eat chocolate before rehearsals/presentations	5	16.6	2	6.66	0.335
To drink alcoholic beverages	16	53.3	16	53.3	1.000
To smoke marijuana	9	30.0	6	20.0	0.374
To smoke cigars	8	26.6	9	30.0	0.771
To use controlled drugs	5	16.6	6	20.0	0.734
Self-medication	3	10.0	4	13.3	0.500
None of the options	7	23.3	10	33.3	0.393
Environment conditions					
To stay in places having mold or little ventilation	19	63.3	11	36.6	0.043*
To stay in places with pollution or smoke	13	43.3	11	36.6	0.598
The use of air conditioning	11	36.6	8	26.6	0.408
The use of heating	9	30.0	3	10.0	0.052
To be in closed places	30	100.0	15	50.0	<0.001*
Dust places	23	76.6	10	33.3	0.008*
To rehearse in places different from the presentation set	26	86.6	4	23.3	<0.001*
To not use the microphone	29	96.7	30	100.0	0.500

* Statistically significant results (p≤0.05) - Equality of two proportions test

Caption: PG= professional group; SG=student group; NA=not applicable; n=number of subjects; %=percentage of subjects

Table 5. Comparison of professional and students groups regarding vocal warm up performance

Vocal warm up	PG		SG		p-valor
	n	%	n	%	
Performs	29	96.6	21	70.0	0.006*
Not perform	1	3.33	9	30.0	

* Statistically significant results (p≤0.05) - Fisher's exact test
Caption: PG= professional group; SG=student group; n=number of subjects; %=percentage of subjects

Table 6. Comparison of vocal warm up types performed by professional and student groups before using voice intensively

Type of vocal warm up	PG		SG		p-valor
	n	%	n	%	
"s" sound, diaphragmatic breathing, vocal fry and vowels	24	80.0	3	10.0	>0.001*
Singing, diaphragmatic breathing and vowels	1	3.33	0	0.0	NA
Yawn and stretch	1	3.33	0	0.0	NA
"v" "s" and "z"	1	3.33	2	6.66	NA
Reading texts while biting finger	1	3.33	2	6.66	NA
Over-articulation of vowels and syllables	1	3.33	4	13.4	NA
Singing	0	0.0	1	3.33	NA
Warm up voice exercises	0	0.0	2	6.66	NA
Shouting, reading loud and breathing	0	0.0	1	3.33	NA
Vocalization, salivation and breathing	0	0.0	2	6.66	NA
Over-articulation of vowels and syllables, eating apple and take water	0	0.0	2	6.66	NA
None of the options	1	3.33	9	30.0	NA

* Statistically significant results (p≤0.05) - Fisher's exact test
Caption: PG= professional group; SG=student group; NA=not applicable; n=number of subjects; %=percentage of subjects

Table 7. Subjects distribution according to type of voice deviation after rehearsal or presentation in professional group and drama classes in student group

Type of voice deviation	PG		SG	p-valor
	Rehearsal	Presentation	Drama classes	
	n (%)	n (%)	n (%)	
More clear and open	9 (30.0%)	7 (23.3%)	8 (26.6%)	
Tired and hoarse	12 (40.0%)	15 (50.0%)	9 (30.0%)	0.273
No change	9 (26.6%)	8 (26.6%)	13 (43.3%)	

* Statistically significant results (p≤0.05) - Chi-Square test
Caption: PG= professional group; SG=student group; n=number of subjects; %=percentage of subjects

DISCUSSION

This study proposal is directed to investigate the actors' routine, and how the drama students are preparing themselves to practice the profession and dealing to voice care issues, and how the voice issues are perceived and improved.

A big voice demand due to theater activity was observed in the current study: rehearsals added to presentations in PG and practice of graduation to become actors in SG, since students had to prepare presentations during the course. The majority of PG was involved in some presentation in three or four days of week, with mean duration of 67.3 minutes by rehearsal. Both groups' rehearsals, related to presentation or preparing presentations, had duration from one to three hours per day creating big voice load. The other actors agreed that theater actors are exposed to exhaustive routine of rehearsals until the opening presentation, and forced to keep good voice quality until the end of season[13,16-18].

These factors increase the risk for theater actors to voice disorders[9,11,13-15,17,18]. The found data in the current study regarding voice disorders agree to previous quoted in literature, because PG subjects had more occurrence of voice disorders (Table 1), and roughness was the symptom more reported (Table 2). The results may be related with the bigger voice demand of professional actors (PG) than students (SG), and also for an accurate self-perception of voice, since any voice deviation, mild or moderate, may limit the actor in scene[9,16,24]. Besides, actors during performance still face improper acoustic conditions, putting voice health in risk, because the absence of sound amplification generates the need to increase loudness. The increase of loudness without proper voice technique and without voice prepare may generate bigger voice effort, leading

to dysphonia[25-27]. Roughness is usually the symptom found in voice professionals[28,29], and it is normally related to improper voice use for a long period of time added to lack of prepare for professional voice use and individual's liability, which favors the start of voice disorders through time[28], as in the current study, more present in PG. Some authors affirm that[2,9,11], for theater actors, the risk for voice disorders is high; therefore any sign of voice deviation, even mild ones, may cause serious consequences for professional activity[9,16,24].

The results allow verifying in group comparison, despite PG having significantly more improper voice habits and act significantly more in place with improper conditions (Table 4), there are a bigger number of participants in this group that did not report difficulty in scenes (Table 3), which may lead to wonder that professional actors, due to more practice trough career, acquire experience to deal better with voce and the difficulties and adverse situation they may face in professional exercise. The students, yet, to be in the beginning of the career, start to experience voice adaptation to character without previous knowledge of maintaining proper vocal health. These findings point out to urgent need of actions preparing the students that will have voice as work tool, and these actions may be offered to prevent voice disorders, but also to previously detect and adjust important parameters to proper profession function[23,30], as expressivity, plasticity, and voice resistance needed to character voice build, vocal health guidance, and vocal warm up and cool down[9,13].

Meanwhile, actors and students perceived voice deviation in scenes, which is positive to start guidance actions, because it is expected actors to have flexible voice, with good projection, proper articulation, without disturbances, focusing on high resonance, and with quality and enough vocal plasticity to adjust to several characters and presenting places[2,13,18-20,25].

PG had higher occurrence of improper voice habits, as using voice while having cold/flu, with improper body postures, speaking without breathing, and shouting / yelling (Table 4). Other authors agree that negative voice habits are part of the professional actors' routine and are not the main focus, which do not provide the attention and importance needed[13-16]. The only habit significantly higher in SG was to drink cold beverages (Table 4), which may be explained due to PG participants to have general knowledge about the negative effect cold beverages may have on voice, acquired by professional experience. Voice disorders are common in voice professionals, caused many times by harmful voice habits, which may cause troubles to keep the professional routine[31].

Despite not statistically significant, health habits related to toxic substances are common among the participants (Table 4). Toxic substances, legal or not, act directly in vocal fold muscles, which may cause damage to voice quality, mainly associated to professional voice use, because they attack the breathing system and vocal tract[20,25-27,31]. Likewise, the continuous use of drugs may also cause negative impacts in voice quality[27]. A previous study with 48 adult actors, 26 (54.2%) male and 22 (45.8%) female, showed 43.8% declared to smoke, 2.1% reported the use of cocaine, 29.2% used regularly marijuana, 72.9% used alcoholic beverages, and 31.3% used some kind of controlled drug continuously[16]. This data corroborates with the present research regarding the continuous use of substances.

The results also point out to the improper work environment of actors, because rehearsals and presentations in both groups occur in improper places. PG stay longer in improper places as having mold or little ventilation, closed and dusty, and rehearsal in place different form the presentation set (Table 4). Previous studies corroborates this results because they affirm, besides intense use of voice, the theater environment is moist, dusty, little ventilated, and with bad acoustic[13-15]. These factors may cause allergy as rhinitis and sinusitis that contributes to the occurrence of noticeable difficulties in the voice use during theater performance[16]. Rehearsing in a different place than the presentation set influence the adaptation of the actor with the acoustic of the stage, and also faces competitive environment noises in presentation; to the described situation, literature report actors tend to increase loudness and effort during phonation[16], leading to voice disorders from tension up to edema development in vocal folds[28]. Literature states the presence of laryngeal hyperfunction in actors is common[32].

Due to high occurrence of harmful habits, the voice care must be encouraged to actors, since voice has a main role in labor activity[20,25,31]. The education action in vocal health should start in drama courses and consider the actor's wellbeing using integrative approaches seeking for the improvement of quality of life[26,27]. The results also corroborates with literature regarding the importance of vocal warm up to preserve vocal tract health, because it decreases the muscles resistances, increases voice flexibility, muscles temperature and body flow, favoring the proper vibration of vocal folds,

the projection, voice quality, and decreasing effort, which enhance voice production[30]. The importance to use voiceless sound and diaphragmatic breathing is achieving proper breathing and air flow control during scenes, essential to the profession[20,25].

However, actors have more concern to breathing, seeking for diaphragmatic breathing, than balanced vocal warm up, preparing the whole phonation production as glottis and resonance. Vowels sounds provided proper work using over-articulation, resonance focus and voice projection[25]. Mucosa wave is prepared using vocal fry[33-35]. Therefore, maybe there is a lack of specific knowledge about the importance of balanced vocal warm up in the actors of the current study. Vocal fry is considered an exercise promoting mucosa wave[34], but literature has controversy opinion[33-35], because there are cases using vocal fry may damage voice quality, resonance and projection[34], really important features to satisfactory professional performance, and also may cause voice hyper-function when performed with tension[35]. Therefore, vocal fry may not be the exercise more indicated to actors, or should be performed guided by professionals. Actors did not report vocal warm up ways to work with vocal fold flexibility or voice resistance, also important features to optimize voice use and decrease discomfort after intense vocal load. Professional actors report vocal warm up, but also complain of roughness, which may be related to a vocal warm up that is not enough to the demand, and do not focus in their main needs, since actors have specific demand as quoted by literature[32].

The reported results may express the professional voice use in PG towards career provided larger knowledge about voice care, reinforcing the previous data of the same group having less difficulty in scene. It is deduced they know the benefits of vocal warm up before performing, but they do not have knowledge about the specific effects expected after performing the exercises. A recent study tested vocal warm up and cool down program in Pedagogy students and concluded that vocal warm up and cool down should be taught to futures teachers in order to prevent voice disorders, and vocal health programs must be directed to students because it decreases the absence in work, improves work quality, and favor professional exercise[30].

There was no difference between the PG and SG regarding the perception of changes in voice after rehearsal or presentation (PG) or drama classes (SG) (Table 7). Despite this result, the big voice demand, especially by PG, requires the vocal warm up and cool down exercises to help in voice quality mantainence and avoid future voice disorders. Likewise, researches with future voice professionals have shown that Speech Language Pathologist may assist during graduation, in order to promote heath and improve voice resistance, preventing voice disorders and enhancing communication before the increase of voice demand with the beginning of professional life[22,23,36-38].

Authors reinforce the Speech Language Pathology work with actors must focus on building the character oral expressivity, and continuously assist in character voice; singing issues; linguistic and para-linguistic factors, involving voice and speech, and also in communication mediated by the body in harmony with voice[12,39].

At last, the specific voice demand of each group, students or actors, must be carefully studied and provided. Vocal exercises during rehearsals, needed pauses during work, health resources used to build characters are some examples that may minimize the voice disorders of this population.

The limitations of the study are related to data collection using questionnaires, without the voice sample recording, due to difficulty of time availability and locomotion by the participants. Future studies are needed relating the self-perception data to Speech Language Pathology assessment.

CONCLUSION

Most participants of the current study have practical activity, as Professional, in presentations or during the learning process, as drama students, preparing the plays. This students' behavior reveal the compromise with the profession from the beginning.

Professional actors reported more roughness than drama students. Both groups reported voice troubles during scene related to articulation, breathing, voice quality and projection, but the professional actor reported less occurrence of trouble during scene due to professional practice and performing some type of vocal warm up.

Both groups have harmful voice habits and are exposed to improper work environment to voice health. These data point out the need of guidance actions, with voice care and training in order to minimize the voice disorders risk, and to prepare students to increasing voice load when the professional presentation start.

REFERENCES

1. Ceballos AGC, Carvalho FM, Araújo TM, Reis EJFB. Avaliação perceptivo-auditiva e fatores associados à alteração vocal em professores. Rev Bras Epidemiol. 2011;14(2):285-95.
2. Behlau M. Voz: o livro do especialista. Rio de Janeiro: Revinter; 2001.
3. Dael N, Mortillaro M, Scherer KR. Emotion expression in body action and posture. Emotion. 2012;12(5):1085-101.
4. Rechenberg L, Goulart BNG, Roithmann R. Impacto da atividade laboral de teleatendimento em sintomas e queixas vocais estudo analítico. J Soc Bras Fonoaudiol. 2011;23(4):301-7.
5. Lima JP, Ribeiro VV, Cielo CA. Sintomas vocais, grau de quantidade de fala e de volume de voz de professores. Distúrbios Comun. 2015;27(1):129-37.
6. Simões-Zenari M, Bitar ML, Nemr K. Efeito do ruído na voz de educadoras de instituições de educação infantil. J Public Health. 2012;46(4):657-64.
7. Musial PL, Dassie-Leite AP, Zaboroski AP, Casagrande RC. Interferência dos sintomas vocais na atuação profissional de professores. Distúrbios Comun. 2011;23(3):335-41.
8. Giannini SPP, Latorre MRDO, Ferreira LP. Distúrbio de voz e estresse no trabalho docente: um estudo caso-controle. Cad Saúde Pública. 2012;28(11):2115-24.
9. Ormezzano Y, Delale A, Lamy-Simonian A. The prevention of voice disorders in the actor: protocol and follow-up nine months of professional theater. Rev Laryngol Otol Rhinol (Bord). 2001;132(1):41-4.
10. Villanueva-Reyes A. Voice disorders in the Metropolitan Area of San Juan, Puerto Rico: profiles of occupational groups. J Voice. 2011;25(1):83-7.
11. Koufman JA, Isacson G. Voice Disorders. Philadelphia: Saunders, 1991.
12. Ferreira LP, Amaral VRP, Souza PH. A Fonoaudiologia e o ator de cinema: relatos de profissionais do meio cinematográfico. Distúrbios Comun. 2010;22(2):133-47.
13. Behlau M, Feijó D, Madazio G, Rehder MI, Azevedo R, Ferreira AE. Voz profissional: aspectos gerais e atuação fonoaudiológica. In: Behlau M. Voz o livro do especialista. Rio de Janeiro: Revinter, 2005. p.163-82.
14. Lima MB, Cielo CA, Cardoso MC. Abordagem fonoaudiológica com atores de teatro durante a preparação teatral. Ciên Mov. 2007;1(1):35-45.
15. Fazzini ES. A voz dentro da relação psíquico orgânica: estudo sobre a influência das emoções na voz do ator. Revista Científica/FAP. 2009;4(1):229-47.
16. Goulart BNG, Vilanova JR. Atores profissionais de teatro: aspectos ambientais e sócio-ocupacionais do uso da voz. J Soc Bras Fonoaudiol. 2011;23(3):271-6.
17. Stanislavski C. Descontração dos músculos. In: A preparação do ator. Rio de Janeiro: Civilização Brasileira, 1999. p. 131-45.
18. Guberfain JC. Ajustes entre o ator, o diretor e o fonoaudiólogo. In: Guberfain JC. Voz em cena. Rio de Janeiro: Revinter, 2005. p. 149-59.
19. Walzak P, McCabe P, Madill C, Sheard C. Acoustic changes in student actors' voices after 12 months of training. J Voice. 2008;22(3):300-13.
20. Zeine L, Waltar KL. The voice and its care: survey findings from actors' perspectives. J Voice. 2002;16(2):229-43.
21. Quinteiro EA. Os atores de teatro falam de suas vozes. In: Ferreira LP, Morato EM, Quinteiro E. Voz profissional: O profissional da voz. São Paulo: Departamento Editorial, 1995. p.137-58.
22. Christmann MK, Scherer TM, Cielo CA, Hoffmann CF. Tempo máximo de fonação de futuros profissionais da voz. Rev CEFAC. 2013;15(3):622-30.
23. Cielo CA, Ribeiro VV, Hoffmann CF. Sintomas vocais de futuros profissionais da voz. Rev CEFAC. 2015;17(1):34-43.
24. Padovani M, Baruzzi MB, Madazio G. Treinamento vocal em atores amadores. Rev Fono Atual. 2005;32(8):4-9.
25. Pinczower R, Oates J. Vocal projection in actors: the long-term average spectral features that distinguish comfortable acting voice from voicing with maximal projection in male actors. J Voice. 2005;19(3):440-53.
26. Penteado RZ, Pereira IMTB. Quality of life and vocal health of teachers. Rev Saúde Pública. 2007;41(2):236-43.
27. Behlau M, Oliveira G. Vocal hygiene for the voice professional. Curr Opin Otolaryngol Head Neck Surg. 2009;17(3):149-54.
28. Ribeiro VV, Cielo CA. Medidas vocais perceptivo-auditivas e acústicas, queixas vocais e características profissionais de professoras de Santa Maria (RS). Audiol Commun Res. 2014;19(4):387-98.

29. Servilha EAM, Pereira PM. Condições de trabalho, saúde e voz em professores universitários. Rev Ciên Med. 2008;17(1):21-31.
30. Masson ML, Loiola CM, Fabron EMG, Horiguera MLM. Aquecimento e desaquecimento vocal em estudantes de pedagogia. Distúrb Comun. 2013;25(2):177-85.
31. Mota LAA, Santos CMB, Barbosa KMF, Neto JRN. Disfonia em cantores: revisão de literatura. Acta ORL. 2010;2(1):27-31.
32. Lerner MZ, Paskhover B, Acton L, Toung N. Voice disorders in actors. J Voice. 2013;27(3):705-8.
33. Conterno G, Cielo CA, Elias VS. Características vocais acústicas do som basal em homens com fissura pós-forame reparada. Rev CEFAC. 2011;13(1):171-81.
34. Brum DM, Cielo CA, Finger LS, Manfrin JÁ. Considerações sobre modificações vocais e laríngeas ocasionadas pelo som basal em mulheres sem queixa vocal. Rev Soc Bras Fonoaudiol. 2010;15(2):282-8.
35. Cielo CA, Elias VS, Brum DM, Ferreira FV. Músculo tireoaritenóideo e som basal: uma revisão de literatura. Rev Soc Bras Fonoaudiol. 2011;16(3):362-9.
36. Cielo CA, Christmann MK, Scherer TM, Hoffmann CF. Fluxo aéreo adaptado e coeficientes fônicos de futuros profissionais da voz. Rev CEFAC. 2014;16(2):546-53.
37. Ferreira LP, Guerra JR, Loiola CM, Ghirardi ACAM. Relação entre os sintomas vocais e suas possíveis causas estudantes universitários. Int Arch Otorhinolaryngol. 2012;16(3):306-12.
38. Santos AAL, Pereira EC, Marcolino J, Leite APD. Autopercepção e qualidade de vida vocal de estudantes de jornalismo. Rev CEFAC. 2014;16(2):566-72.
39. Fraga M, Jurado Filho LC. Distribuição de pausas na interpretação de atores. Dist Comun. 2014;26(3):472-9.