

Original articles

Factors associated with vocal health and quality of life in teachers/professors

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ABSTRACT

Purpose: to analyze the association of self-reported vocal symptoms with personal, occupational and clinical aspects and relate them to the quality of life of teachers/professors of the federal network of vocational and technological education.

Methods: study carried out with 157 teachers from a federal public institution of vocational and technological education, who answered the World Health Organization Quality of Life questionnaire (WHOQOL-bref), Quality of Life in the Voice (V-RQOL) questionnaire and a data form (on social information, health conditions, vocal symptoms, habits, organization and working environment). Statistical analysis was performed using the Chi-square test.

Results: 29% of the teachers presented vocal symptoms. The prevalent complaints were dry throat (38.2%), cough (37.6%) and hoarseness (30.6%). There was a higher prevalence of symptoms in females. For the WHOQOL-bref, the average was 71.3 points, which is considered regular. The domain with the highest score was the psychological one with 75.3. Regarding V-RQOL, the average score in the global domain was 92.5 points, and the physical score was the most compromised one. 90.5% of teachers showed low voice impact on quality of life.

Conclusion: although these teachers present vocal complaints, they do not reflect in the limitation of the quality of life.

Keywords: Voice; Quality of Life; Teachers

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INTRODUCTION

The National Consensus on Professional Voice (CNVP) emphasizes that the voice reflects the physical and mental health of the individual. The occurrence of dysphonia is very common in professions where the voice is used as a working tool. In its final report, the CNVP established the concept of professional voice as the form of oral communication used by individuals who depend on it to perform their occupational activity¹. According to the Ministry of Health's document, the Department of Environmental Health and Worker's Health, the Work-Related Voice Disorder (DVRT) is any vocal change directly related to the use of voice, during the professional activity that diminishes, compromises or prevents the worker's performance or communication, having it organic changes in the larynx or not².

In the teaching work, the combination of prolonged voice use, individual, environmental and work organization factors, work together to increase the prevalence of vocal complaints. The voice disorder is manifested by the presence of signs and symptoms that may arise simultaneously or not, according to the severity of the case, and may lead to situations of withdrawal from work, with financial and social consequences².

An epidemiological study conducted with 1,651 teachers and 1,614 non-teachers in 27 Brazilian states used a standardized questionnaire and found a higher prevalence of vocal symptoms in the teachers' group. It was concluded, then, that teaching is a high-risk occupation for the development of vocal disorder³.

There was an interest in research, in the last decade, to verify the influence of voice changes on quality of life (QoL) in patients and / or subjects who use the voice professionally⁴⁻⁶.

Quality of life is a broad, subjective and multidimensional concept that encompasses the subject's perceptions in the physical, psychological and social aspects, considering their values, goals, experiences, needs, culture, patterns and concerns⁷.

Researches that study the self-perception of QoL, in the voice area, use instruments that seek to capture the individual's impression of their own voice, which provides information that contributes to the understanding of vocal awareness⁸.

A systematic review of the literature found that there is a need to increase research on Quality of Life related to the voice of the teacher at different levels of education (Kindergarten, Elementary, High-school or Graduate) and types of schools (Public or Private)

that contemplate aspects on the conditions and organization of teaching work⁹.

Because of the transformations that have taken place in the social and economic context of the country in the last decades¹⁰, the offer of technical and professional education in Brazil is expanding. In view of these facts, the importance of this research is justified, due to the lack of even greater scientific production related to voice in relation to quality of life, when it comes to technical and vocational education teachers. Thus, it is expected that this research may provoke reflections and proposals to highlight the importance of vocal health.

The aim of this study was to analyse the association of self-reported vocal symptoms with personal, occupational and clinical aspects and relate them to the quality of life of teachers from the federal network of vocational and technological education.

METHODS

It is a descriptive, observational, cross-sectional, quantitative study. The Research Ethics Committee of the Center has approved it for Post-graduate Studies in Maceió, AL - CESMAC with CAEE number: 49932215.3.0000.0039 from the "Plataforma Brasil". All the participants signed the Term of Free and Informed Consent (TCLE) based on Resolution 466/12 of the National Health Council of the Ministry of Health (CNS / MS).

The data were collected in a Federal Education Institution, whose professors occupy the positions of Professor of Basic, Technical and Technological Education and can teach in the offered teaching modalities, the integrated, the subsequent, the graduation education and also the PROEJA, acting in only one or simultaneously in more than one mode.

In the integrated education, students obtain an intermediate level training in conjunction with professional training, at a technical level in the intermediate level. The subsequent is the professional training course at a technical level, offered to students who have finished high school¹¹. The Institute also offers courses aimed at Youth and Adult Education (EJA), aimed to those who did not have access or continuity of studies in primary and secondary education in their proper age¹². It also has graduate courses available at graduation, baccalaureate and technology levels¹¹.

The population covered all active teachers, of both sexes, without restriction as to age, with effective bond, in full and regular activity, making 263 teachers.

Teachers dismissed for any reason and those who performed only administrative activities were excluded because they presented different organizational and work environment characteristics from the others in relation to vocal demand. The sample was determined in 157 individuals, using the equation for finite populations.

All participants answered two validated questionnaires, the World Health Organization Quality of Life / bref (WHOQOL / bref)¹³ and the Quality of Life in Voice (V-RQOL) questionnaire⁸. A third party form named "Data Collection Form", based on a theoretical reference of the area of Speech-Language Therapy¹⁴, pertinent to the authors who subsidized the elaboration of the instrument used in the research (Appendix).

The WHOQOL-bref with 26 questions, validated in Brazil, comprising four domains, which aim to analyse physical capacity, psychological well-being, social relations and the environment, was used. The teachers can present their answers by means of the variable score from one to five, being score one the worst condition and five, the best one. The WHOQOL-bref domains are calculated according to the terms defined in the Portuguese validation article. The results of the domain scores show values between zero and one hundred, with the worst being the closest to zero and the best, the nearest to 100. Thus, an individual with a score equal to 50 for a particular domain can be considered median in this particular domain¹³.

The Quality of Life in Voice (V-RQOL) questionnaire evaluates the Quality of Life related to the voice, and is based on the subjectivity of the teacher, who also assigns a scale from 0 to 5 according to his perception. This is a standardized inventory - Voice Related Quality of Life (V-RQOL)¹⁵ translated and validated into Portuguese⁸. The V-RQOL contains ten questions and examines the relationship between quality of life and voice in three domains: physical (questions 1, 2, 3, 6, 7 and 9), social emotional (questions 4, 5, 8 and 10) and

global, this latter aggregated to the previous two. The protocol makes it possible to calculate the scores (sum of points), which ranges from 0 (worst) to 100 (best), with the maximum score indicating a better quality of life related to voice⁸.

The "Data Collection Form" addressed social information (age, gender), the organization of the teacher's activities, characteristics of the environment and work organization, health conditions, vocal symptoms and habits related to the use of voice.

The data obtained by the questionnaires were tabulated in the Excel 2010 program (Microsoft Office®). Next, the descriptive statistical analysis (absolute and relative frequency) of the variables collected in the Data Collection Form, the WHOQOL-bref scores and the V-RQOL in each of the domains was used. Subsequently, the verification of inferential statistics was performed, using the non-parametric association test χ^2 (Chi-square), through the BioEstat® 5.0 program, to analyse the associations between self-reference of three or more vocal symptoms and the cross-referencing between the various variables studied (social characteristics, environment and work organization, behaviours and habits related to health, diseases). A minimum significance level of 5% ($p \leq 0.05$) was considered in order to reject the equality hypothesis.

RESULTS

The data show that 29.3% (46) of teachers suffer from three or more self-reported vocal symptoms. Among the prevalent complaints were 38.2% (60) with dry throat, 37.6% (59) with cough, 30.6% (48) with hoarseness and 27.4% (43) reported pain or burning in the throat.

Table 1 presents the description of the social characteristics and work environment collected in the Data Collection Form and their association to the presence of three or more vocal symptoms collected.

Table 1. Relationship between social and work environment characteristics reported by teachers and complaints of vocal symptoms

Variable	With three or more symptoms				Total		P
	No		Yes		n	%	
	n	%	n	%			
Gender							
Males	79	50.3	25	15.9	104	66.2	0.0425
Females	32	20.4	21	13.4	53	33.8	
Age range							
21 – 30	3	1.9	1	0.6	4	2.5	0.7062
31 – 40	27	17.2	13	8.3	40	25.5	
41 – 50	40	25.5	13	8.3	53	33.8	
51 – 60	32	20.4	17	10.8	49	31.2	
61 – 70	9	5.7	2	1.3	11	7.0	
Noise							
No	5	3.2	2	1.3	7	4.5	0.7937
Tolerable	87	55.4	34	21.6	121	77.0	
Unpleasant	19	12.1	10	6.4	29	18.5	
Use of Chalk							
No	108	68.8	45	28.7	153	97.5	0.5370
Sometimes	2	1.3	0	0.0	2	1.3	
Frequently	1	0.6	1	0.6	2	1.3	
Temperature							
Good	47	29.9	22	14.0	69	43.9	0.7570
Reasonable	48	30.6	19	12.1	67	42.7	
Unpleasant	16	10.2	5	3.2	21	13.4	

* Statistically Significant Values ($p \leq 0.05$) – Non-parametric association test χ^2 (Chi-square)

Table 2 shows the professional and organizational characteristics of teachers' work and their association with the recording of three or more vocal symptoms. The average weekly workload was 14.5 (SD \pm 4.72), with a minimum of 4 and a maximum of 40 hours. As

for the teaching time, it was observed that 44.6% of teachers have more than 20 years of profession, with 19.4 years \pm 9.246 (Average \pm SD), minimum 1 and maximum 39 years.

Table 2. Relationship between professional and work organization characteristics mentioned by teachers and record of three or more vocal symptoms

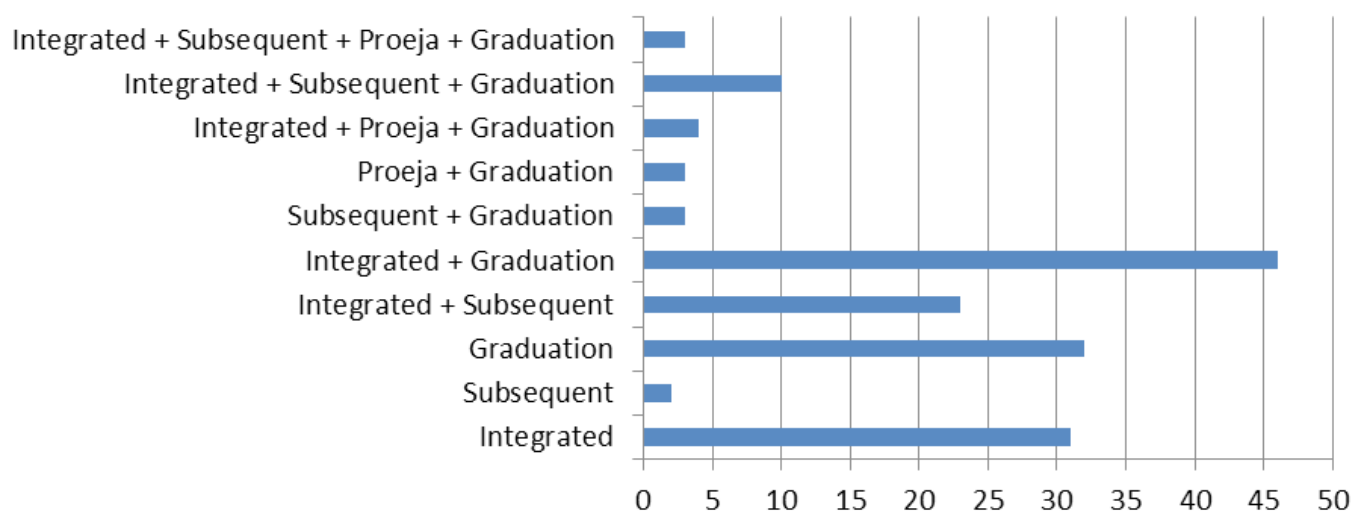
Variable	With three or more symptoms				Total		P
	No		Yes		n	%	
	n	%	n	%			
Weekly Workload							
Up to 10 hours	19	12.1	12	7.6	31	19.7	0.2809
11 to 20 hours	86	54.8	30	19.2	116	74.0	
Above 20 hours	6	3.8	4	2.5	10	6.3	
Time of Teaching							
≤ 5 years	4	2.5	5	3.2	9	5.7	0.6186
6 to 10 years	21	13.4	8	5.1	29	18.5	
11 to 15 years	14	8.9	6	3.8	20	12.7	
16 to 20 years	20	12.7	9	5.8	29	18.5	
21 to 25 years	24	15.3	8	5.1	32	20.4	
>25 years	28	17.9	10	6.3	38	24.2	
Time in the Institution							
≤ 5 years	21	13.4	11	7.0	32	20.4	0.7022
6 to 10 years	29	18.5	12	7.6	41	26.1	
11 to 15 years	5	3.2	3	1.9	8	5.1	
16 to 20 years	18	11.5	8	5.1	26	16.6	
21 to 25 years	21	13.3	9	5.8	30	19.1	
>25 years	17	10.8	3	1.9	20	12.7	
Works as a teacher outside the Institution							
Yes	4	2.5	3	1.9	7	4.4	0.4201
No	107	68.2	43	27.4	150	95.6	
Nr. of students							
Up to 20	31	19.7	15	9.6	46	29.3	0.5045
21 to 40	66	42.0	28	17.9	94	59.9	
>41	14	8.9	3	1.9	17	10.8	
Class Intervals							
Never	17	10.8	4	2.5	21	13.3	0.4052
Sometimes	61	38.9	30	19.1	91	58.0	
Always	33	21.1	12	7.6	45	28.7	
Most used teaching method							
Exhibition Classes	74	47.2	29	18.5	103	65.7	0.5181
Exhibition Classes+ Group Work	14	9.0	4	2.5	18	11.5	
Exhibition Classes+ Group work + others	7	4.4	5	3.2	12	7.6	
Exhib. Classes+ other	8	5.1	3	1.9	11	7.0	
Groups + others	0	0.0	1	0.6	1	0.6	
Group work	2	1.3	0	0.0	2	1.3	
Others	6	3.8	4	2.5	10	6.3	

* Statistically Significant Values ($p \leq 0,05$) – Non-parametric association test χ^2 (Chi-square)

Regarding the working time of the teachers in the Institution surveyed, 46.5% of them had up to 10 years of exercise; in contrast, another 31.8% had more than 20 years of work in the institution. The average working time was 15.3 years (± 10.0).

Figure 1 shows the distribution of the teaching levels taught by teachers. The majority (29.3%) (46)

of teachers teach in the “integrated and graduate” classes, 20.4% (32) only teach at the “graduate” level, while 19.7% (31) teach exclusively in the “integrated” ones. As we add the percentages, it can be seen that 49.7% of teachers teach in integrated and graduate education classes, or only in graduate education.



Legend:

Integrated education: students obtain an intermediate level training in conjunction with professional training, at a technical level in the intermediate level.

Subsequent: is the professional training course at a technical level, offered to students who have finished high school.

Youth and Adult Education (PROEJA): comprised by people who did not have access or continuity of studies in primary and secondary education in their proper age.

Graduation: graduate courses available at graduation, baccalaureate and technology levels.

Figure 1. Numerical distribution of teachers according to the teaching modalities in which they teach

Table 3 shows the behaviours and habits related to the health of teachers.

Table 4 shows the data collected from the answers presented by the teachers regarding self-reported diseases.

The prevalence of symptoms according to the gender is exposed in Figure 2.

Table 5 shows the WHOQOL-bref results. The domains average and the quality of life score showed that the teachers presented a regular quality of life.

Table 3. Relation between health-related behaviours and habits, and record of three or more vocal symptoms

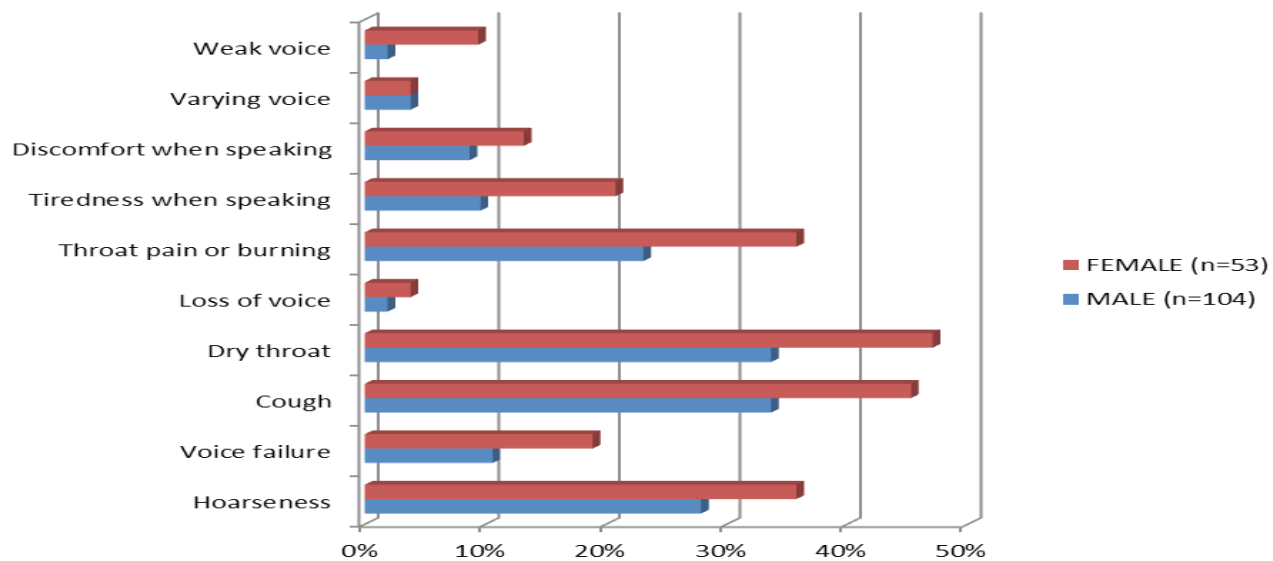
Variable	With three or more vocal symptoms				Total		P
	No		Yes		n	%	
	n	%	n	%			
Water a day							
Less than 1 litre	16	10.2	9	5.8	25	16	0.6858
1 to 2 litres	72	45.8	27	17.02	99	63	
More than 2 litres	23	14.6	10	6.3	33	21	
Water during the classes							
Never	27	17.2	9	5.8	36	22.9	0.8103
Sometimes	54	34.4	24	15.3	78	49.7	
Always	30	19.1	13	8.3	43	27.4	
Use of voice							
Little	4	2.5	1	0.6	5	3.1	0.5039
Moderate	56	35.6	18	11.5	74	47.2	
Much	48	30.6	26	16.5	74	47.2	
Too much	3	1.9	1	0.6	4	2.5	
Constant use of voice in other activities							
Yes	33	21.0	13	8.3	46	29.3	
No	78	49.7	33	21.0	111	70.7	
Doctor/Speech Therapist							
Yes	13	8.3	14	8.9	27	17.2	0.0047
No	98	62.4	32	20.4	130	82.8	
Profess. Guidance of the use of voice professionally							
Yes	12	7.7	5	3.1	17	10.8	0.9914
No	99	63.0	41	26.2	140	89.2	
Leave of absence for vocal problems							
Yes	3	1.9	7	4.4	10	6.3	0.0035
No	108	68.8	39	24.8	147	93.6	
Alcoholic Drink							
No	43	27.4	17	10.8	60	38.3	0.9622
Stopped	5	3.1	2	1.3	7	4.4	
Special Occasions	58	36.9	24	15.3	82	52.3	
Always	5	3.1	3	1.9	8	5.0	
Smoking							
No	98	62.4	40	25.5	138	87.9	0.9231
Yes	3	1.9	1	0.6	4	2.5	
Ex-smoker	10	6.3	5	3.1	15	9.6	

* Statistically Significant Values ($p \leq 0,05$) – Non-parametric association test χ^2 (Chi-square)

Table 4. Association between self-reported symptoms / sensations by teachers and record of three or more vocal symptoms

Variable	With three or more vocal symptoms				Total		P
	No		Yes		n	%	
	n	%	n	%			
Respiratory Allergy							
Yes	21	13.4	25	15.9	46	29.3	0.0001
No	90	57.3	21	13.4	111	70.7	
Asthma							
Yes	3	1.9	0	0	3	1.9	0.2602
No	108	68.8	46	29.3	154	98.1	
Rhinitis/sinusitis							
Yes	32	20.4	27	17.2	59	37.6	0.0004
No	79	50.3	19	12.1	98	62.4	
Pharyngitis/tonsillitis/ laryngitis							
Yes	22	14.0	22	14.0	44	28.0	0.0004
No	89	56.7	24	15.3	113	72.0	
Gastritis/Gastroesophageal reflux/ heartburn							
Yes	26	16.6	19	12.1	45	28.7	0.0241
No	85	54.1	27	17.2	112	71.3	

* Statistically Significant Values ($p \leq 0,05$) – Non-parametric association test χ^2 (Chi-square)

**Figure 2.** Prevalence of vocal symptoms with respect to sex**Table 5.** Average and standard deviation of scores according to the domains of the World Health Organization Quality of Life / bref questionnaire (WHOQOL-bref)

Domains	WHOQOL	
	Average	Standard Deviation
Physical Score	73.0	± 13.4
Psychological Score	75.3	± 11.9
Social Relations Score	71.8	± 15.9
Environment Score	66.1	± 12.7
Quality of life Score	71.3	± 10.9

The domain of the environment is related to aspects of safety, health, physical environment (climate, noise and pollution), finance, access to information and leisure activities. The issues with the worst scores were related to this domain, specifically question 24 (satisfaction with health services), question 9 (how healthy is the physical environment - climate, noise, pollution, attractions) and question 14 (opportunities for leisure activities). Question 16, which concerns sleep, is part of the physical domain; presented a larger number of unfavourable answers, showing either dissatisfaction or a lot of dissatisfaction.

The overall V-RQOL score was 92.5 (\pm 8.4), indicating a low voice influence on teachers' quality of life. The closer to 100 the score, the better this ratio. The physical score was 89.3 (\pm 10.4), and the social-emotional score was 97.3 (\pm 7.5). It is interesting to note that although 29.3% of teachers reported three or more vocal symptoms, this had no impact on quality of life.

In percentage and quantitative terms in the V-RQOL, the "low impact" scores of voice on quality of life were presented as follows: in the physical domain 81.5% (128); in the social-emotional 96.2% (151), and in the global domain, 90.5% (142).

When analysing questions 1 to 10 of the V-RQOL separately, it is observed that the most committed question is 1, followed by questions 2 and 9. It is worth commenting that complaint 1, 2 and complaint 9 were those that presented the worse evaluations, both belonging to the physical domain, and are related to the professional use of voice. The number of teachers who considered these issues as a moderate to bad problem was 24.2% for complaint 1, 10.8% for complaint 9 and 7.6% for complaint 2.

Figure 3 shows that the V-RQOL scores were all above 80, that is, they had a low impact of voice-related quality of life, however, the domains averages portrayed that the physical domain scores were lower in both sexes, but a little worse in women, especially those who reported three or more complaints in their voices.

V-RQOL	With three or more vocal symptoms		With less than three vocal symptoms	
	Men	Women	Men	Women
Physical Domain	86.8	82.9	91.3	90.1
Social Emotional Domain	96.2	95.8	97.3	99.0
Global Domain	90.6	88.0	93.7	93.7

Legend: V-RQOL: Voice Related Quality of Life

Figure 3. Comparison of the average scores obtained in the voice-related quality of life (V-RQOL) protocol by gender, with or without three or more vocal symptoms per domains

When comparing the V-RQOL scores by gender, in percentage terms, it was found that 13.2% (7) among women in the sample presented scores of medium to high impact, while among men the percentage was 7.7% (8), that is, more disadvantage for the female sex.

Table 6 shows the results of V-RQOL in relation to the average WHOQOL-bref scores. We compare the V-RQOL data with the average scores obtained in the

WHOQOL-bref in each domain. We noticed that there is a correspondence between the protocols. This order is reversed in the case of the V-RQOL high impact, whose WHOQOL-bref domain scores were surprisingly better, with values between 83.3 and 95.8. These data reinforce the idea that worse outcomes of the WHOQOL-bref are paired with the worst rates of V-RQOL.

Table 6. Association of the Voice-Related Quality of Life Protocol (V-RQOL) scores in the Global domain compared to the scores of the various domains of the WHOQOL-bref

V-RQOL Global	WHOQOL-Bref	Domains Averages
Low Impact n= 142	Environment	66.7
	Social Relations	72.1
	Psychological	75.6
	Physical	73.7
	General	72.0
Medium Impact n= 14	Environment	58.7
	Social Relations	67.8
	Psychological	70.8
	Physical	65.0
	General	65.6
High Impact n= 1	Environment	87.5
	Social Relations	83.3
	Psychological	95.8
	Physical	85.7
	General	88.1

* a comparative analysis of the V-RQOL (low, medium or high voice impact in the quality of life), with the scores averages obtained in the WHOQOL-bref in each domain.

DISCUSSION

The associations were performed by comparing the responses of the variables with the occurrence of three or more vocal symptoms, through the application of the statistical test. The literature indicates that teachers' quality of life is related to self-perception of vocal symptoms^{4,6,9}.

According to the data collected, it was possible to obtain an overview of the technical and vocational education teachers' self-perception regarding the quality of life and voice, as well as the associated factors that may influence vocal health.

The sample had the highest number of men, which is expected to be for this level of education, although the literature presents most of the publications with the majority of the sample being women. According to

the School Census, the profile of teachers is markedly feminine in the initial years and is reversed as they move from Early Childhood Education to High School and Professional Education¹⁶. Research with primary school teachers showed a higher prevalence of self-reported voice alteration in females¹⁷.

Likewise, in this study, female teachers also presented a higher percentage of vocal symptoms. It was found that 39.6% of the female teachers had three or more vocal symptoms, which indicates a greater disadvantage in the female gender, with a statistically significant value. There was a lower index among male teachers, with 24% of male teachers reporting complaints. Studies have shown that there are important changes in the glottis configuration of women during prolonged phonation with high loudness (subjective

sensation of intensity), possibly due to constitutional, anatomical differences and double working shift¹⁸.

The average age of the teachers studied was 47.2 (SD \pm 9.12). The age factor deserves special attention, since the age group between 25 and 45 is considered to have the best vocal efficiency, and as the age advances, structural changes in the larynx may occur and may compromise vocal quality¹⁹. A study with technical and vocational education teachers found 39% between the ages of 30 and 39 years, followed by 29% in the 40-to-49-age group²⁰. In this study, there were more teachers aged between 41 and 50 years (33.8%), but those most affected with vocal complaints were in the age group of 51-60 years old (10.8%).

Noise was pointed out by 77% of the teachers as tolerable and 18.5% judged the noise as unpleasant. Research carried out with higher education teachers referred to the presence of noise in the classroom, but only 48.1% mentioned voice alteration, and found no significant association²¹. High / unbearable noise in the classroom increases the prevalence of poorer quality of life related to teachers' voice²².

The researches show differences as to the influence or not of the high teaching workload on the development of vocal disorders in the teacher⁴. There are studies that did not verify significance between working two shifts or more in the classroom, which characterizes high vocal demand, and the prevalence of symptoms in the voice^{23,24}. However, other researchers have found that working in the classroom for 24 hours a week or more in the last six months has demonstrated a significant association with hoarseness in teachers²⁵.

In this study, the average classroom workload of less than 20 hours per week may be the reason for not being associated with the presence of three or more symptoms. Another factor worth mentioning is the composition of the study, in which the majority of teachers are male, unlike other studies, in which there is a greater predominance of female teachers, who are more predisposed to vocal alterations^{17,18,26}.

The literature shows divergent results regarding the association between vocal alterations and teaching time²⁵. Studies present opposite data. Teachers with more years of teaching did not present any more vocal alterations complaints than those with less time of work²⁴. A study with teachers of professional and technological education found that 48% had less than ten years of service, and 8% had taught for more than twenty-five years²⁰. There has been an expansion in the number of schools after the creation of the Federal

Network of Professional, Scientific and Technological Education and the Federal Institutes of Education are a part of it. This consequently increased the number of new servants in recent years¹⁰, which justifies the number of teachers with more than 20 years teaching and less than ten years of practice in the institution studied.

The majority (95.6%) of the teachers in this study taught only in the school assessed. Similar research, with teachers of this same level of education, found that 88% of the teachers worked only in the institution researched, for years²⁰.

We noted that 65.6% (103) of the educators in this research referred to preferential use of the exhibition classes. Other authors²⁴ refer to a preference for this method of teaching in association with audio-visual resources, however, because it requires the constant use of voice, it results in greater vocal exhaustion if the teacher does not have the necessary preparation.

In this study, 29.3% of the teachers reported activities with voice use besides teaching, and 8.3% of them reported three or more vocal symptoms. Speech professionals wear the speech device in and out of their work environment, so that they increase voice overload, with possible onset of signs or symptoms after work, generating uncertainty in the cause and effect relationship¹.

Only 10.8% (17) of the teachers who participated in this study sought guidance on the use of voice professionally. Research reports that teachers lack guidance on how to identify and deal with vocal disorders⁶. A recent study found that the minority (36.4%) of teachers received some type of vocal orientation regarding voice care²⁷.

It was observed that 6.4% (10) of the teachers needed medical leave or absence from work because of vocal problems. In the State of Alagoas, voice disorders are one of the main reasons for teachers to leave work environment. The number of teachers with vocal alterations has increased since 2003²⁸.

Regarding the consumption of alcoholic beverages, 52.3% of them said they only use it on special occasions and 5% stated that they always drink. Although alcoholism is a factor related to vocal changes, there was no significant association²⁵, and this corroborates with research.

Only 2.5% of the subjects mentioned smoking. Research conducted in 2014 by the Ministry of Health and the Brazilian Institute of Geography and Statistics (IBGE) reveals that the rate of people who smoke

cigarettes and other tobacco products is 20.5% lower than that recorded five years ago. Therefore, smoking habit has less and less followers in Brazil, according to IBGE's Special Tobacco Survey (PETab)²⁹.

In this sample, the most cited self-reported diseases were 37.6% rhinitis / sinusitis, 29.3% respiratory allergy, 28.7% gastritis / gastroesophageal reflux / heartburn, 28% pharyngitis/tonsillitis /laryngitis. Problems of the upper airways are an important concern for the teacher's work, since approximately 40% referred to problems such as sinusitis, rhinitis, tonsillitis, pharyngitis³⁰. Another recent study confirms that 37.2% of teachers report allergy, so demonstrating high prevalence²⁷.

Studies have shown that self-evaluation or vocal self-perception has been highly valued. In this study, 29.3% mentioned three or more self-reported vocal symptoms. These results corroborate with other studies carried out with teachers^{6,25,28,31}.

Symptoms such as hoarseness, vocal fatigue, and throat pain in teachers are signs of vocal abuse or voice use in inappropriate work conditions that may contribute to the onset of an occupational disease³². Research with teachers from the State School of Alagoas found approximate data regarding the most frequent symptoms: 54.5% with dry throat, 42.7% throat clearing and 42.7% throat burning²⁸. Another study mentions 44.3% with hoarseness, 54.5% with fatigue when speaking and 53.4% with dry throat³³. Researchers found a prevalence of dry throat sensation in 66.6% and hoarseness in 40.4%³⁴.

Teachers should be warned about the importance of perceiving when the first signs / symptoms of vocal changes appear and seek guidance and treatment, avoiding an aggravation with negative impact from a professional, social and emotional point of view. The teacher without vocal symptoms will be more active in their activities⁶.

In the WHOQOL-bref protocol analysis in this study, the average score obtained was 71.3 (SD \pm 10.9). A similar survey conducted with this same research instrument found a score of 66 as a general average of quality of life, being it considered as a regular score, taking into account that the scale of values varies from zero to one hundred⁴. By comparison, it can be inferred that the WHOQOL-bref results in this study can be considered as a regular quality of life. The most affected domain was that of the environment with 66.1 corroborating with other studies^{4,35}.

A study that used this same protocol (WHOQOL-bref) with teachers from public schools had scores similar to those of this study, 68.5 in quality of life, of which 67.6 in the physical domain, 70.1 in the psychological domain, 73.9 in the social domain and 62.4 in the environmental domain³⁶. In another research with high school teachers, 68.2 in the physical, 68.2 in the psychological, 70.3 in the social relations, 56.1 in the environment, results very close to those of this research⁴.

A systematic review of the literature, whose objective was to verify the existent researches on quality of life related to teachers' voices, concluded that V-RQOL was the most used protocol in this population⁹.

The average V-RQOL score in the global domain was 92.4 (SD \pm 8.4). It can be inferred that for teachers of the researched education institution the impact of voice on quality of life was low. Some researches using the V-RQOL found averages of the domains with scores close to those of this research. A similar average of 91.1 points with teachers and 93.0 for the group of non-teachers³⁷. However, there are studies, with much lower scores for the global domain, with a score of 65.2 performed with elementary and high school teachers³⁸.

It is worth highlighting in this study the fact that all domains of V-RQOL were classified within the range of low voice impact in the quality of life (with scores above 80), but the most affected domain was the physical one. Literature indicates that the physical aspects, for being related to the discomfort and complaints presented by the use of the voice, facilitate the perception of the individuals to evaluate it as the most shocking. Several studies confirm this fact^{4-6,9,37,38}.

In this study, there was a greater impairment of V-RQOL in questions 1, 2 and 9, which refer to the difficulties in speaking loudly or being heard in noisy environments, the air ending quickly and having to breathe many times while speaking and still having to repeat what they spoke in order to be understood. Other research indicates that the number of teachers (51%) with some difficulty to be heard in noisy environments is relatively high (Question 1)⁶.

Scores remained very near between the genders, with a small disadvantage for females. Another research concluded that when comparing the V-RQOL results of 1304 subjects with varied gender, age and professional vocal usage levels, the impact on quality of life related to a vocal alteration was similarly perceived by both men and women. The total results found in that study were similar in the three domains for men (total 75.5,

physical 71.3, socioemotional 82.3) and women (total 74.9, physical 70.7, socioemotional 82.1)³⁹.

Research with elementary school teachers found values of 72 points in the V-RQOL for the global domain³¹. With university professors, the impact of voice on quality of life was low, with an average global domain score of 82.6 points⁵. Most university teachers presented a good quality of life associated with voice, according to the V-RQOL evaluation, with a median of 97.5 points for the global domain, but a high prevalence of vocal symptoms was evidenced⁶. These results with university professors showed a profile, which is closer to the reality of the professionals of this research with teachers of technical and professional education. Even in this aspect, in which the symptoms did not reflect compromising the quality of life of the teachers.

It is necessary to be alert to the multicausality of dysphonia, linked to environmental conditions and factors and to the organization of work within the school, in addition to the causes related to individual health habits and conditions of each teacher. In this study, significant associations were few, and voice-related quality of life (V-RQOL) indexes in the global domain showed that 90% of teachers had a "low impact" score. However, it is worth mentioning that out of the 157 teachers participating in this study, 29% (46) reported three or more vocal symptoms that were negative for the voice, indicating caution and vigilance. Signs and symptoms are present in phases that precede organic changes, such as laryngeal changes observed in more advanced phases of dysphonia⁴⁰.

CONCLUSION

Almost 30% of the teachers presented self-reported complaints of vocal symptoms. The prevalent complaints were 38.2% with dry throat, 37.6% with cough and 30.6% with hoarseness. There was a higher prevalence of symptoms in the female gender, with a statistically significant value. The symptoms presented significance with the self-reported presence of some pathologies: respiratory allergy, upper airway diseases, gastroesophageal reflux and gastritis. As for the WHOQOL-bref, the average scores were 71.3 points, with a standard deviation of ± 10.9 , therefore, considered as regular. The domain with the highest score was the psychological one, with 75.3 and the most harmed was the environment, with 66.1 points.

According to the V-RQOL assessments, the average score obtained in the global domain was 92.4 points. The domain with the most disadvantage was the

physical one and the most compromising issues were difficulty in speaking loudly or being heard in noisy environments, the air ending quickly and having to breathe many times while speaking, and the need to repeat what they say in order to be understood. 90.5% of teachers had low voice impact on quality of life. Thus, it can be inferred that the impact of the voice on the quality of life for the teachers of the professional and technological teaching researched was low. It can be concluded that although the teachers had 29% of vocal symptoms, these did not reflect in the limitation of quality of life.

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APPENDIX. Data collection form**DATA COLLECTION FORM**

If you do not feel comfortable answering a question, you may leave it unanswered.

Date: ___/___/___ Gender: Female () Male () Age: ___ years Date of Birth: ___/___/___
 Level of Performance: Integrated () Subsequent () ProEJA () Graduation ()
 Teaching Time (total in years): _____ Teaching Time in the IFAL (years): _____
 Do you currently work as a teacher elsewhere: Yes () No ()
 No. Of hours of classes you currently teach per week (in IFAL or elsewhere): _____h/classes
 No. Of students per class (average): Up to 20 () from 21 to 40 () More than 41 ()
 Most used method. Exhibition Classes () Group Work () Others ()
 Do you use your voice constantly in another kind of activity: Yes () No () Which? _____
 Use of voice in everyday life: I speak: little () moderately () Much () Too much ()
 Noise in the classroom: No () Tolerable () Unpleasant ()
 Use chalk in the classroom: No () Sometimes () Frequently () Always ()
 Temperature in the classrooms: Good () Reasonable () Unpleasant ()
 Interval between classes: Always () Sometimes () Never ()
 Drink water during the classes: Always () Sometimes () Never ()
 How much water do you drink a day (in litres): Less than 1L () Between 1 and 2L () More than 2L ()
 Alcoholic Drinks: No () Stopped drinking () Always () Special Occasions ()
 Smoke: No () Yes () Ex-smoker ()
 If yes, how many cigarettes a day on average: _____ For how long (in years): _____
 If ex-smoker, how long ago did you stop smoking?: _____ How many cigarettes a day on average? _____
 Did you see a doctor or speech-language pathologist because of voice problems? Yes () No ()
 Did you seek guidance on voice usage professionally? Yes () No ()
 Have you had medical leave or left work for a while because of voice problems:: Yes () No ()
In the last six months did you have episodes of: Respiratory allergy () Asthma ()
 Rhinitis and/or Sinusitis () Depression related to voice limitation ()
 Pharyngitis and / or Laryngitis and / or Tonsillitis () Gastritis and / or Reflux and / or Heartburn ()

Vocal or throat symptoms in the last six months: Hoarseness () Voice failure ()
 Cough () Dry throat () Loss of voice () Throat pain or burning () Tiredness when speaking ()
 Discomfort when speaking () Voice varying thin / thick () Weak voice ()

NOTE: The issues that comprise this instrument are based on other forms available in scientific articles of Speech-Language Therapy.