

Vocal handicap and associated factors in teachers: evidence from a cross-sectional study

Desvantagem vocal e fatores associados em professores: evidências de um estudo transversal

Desventaja vocal y factores asociados en profesores: evidencias de un estudio transversal

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Abstract

Introduction: The teaching profession is considered by the International Labour Organization as the profession with the highest risk of occupational voice disorders. **Objective:** To investigate the level of vocal handicap and associated factors among teachers at a public school in the city of Florianópolis. **Methods:** This is a cross-sectional study. The CPV-P and IDV-10 questionnaires were administered to 82 of the 121 invited teachers. The dependent variable was the self-perception of vocal handicap, while independent variables included sociodemographic characteristics, functional status, work environment and organization, vocal aspects, habits, and lifestyle. Data were analyzed descriptively and through Pearson's Chi-square and Fisher's Exact tests. **Results:** Among the 82 teachers, there was a higher frequency of females (63.41%), aged 40 to 59 years (48.78%), and teachers who were married or in a stable union (47.56%). The prevalence of vocal handicap was 34.62%. An association was observed between vocal handicap and shorter professional experience ($p=0.020$), sometimes having a good relationship with students ($p=0.012$), dissatisfaction with one's voice ($p=0.025$), increased absenteeism

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due to vocal issues ($p=0.001$), lack of leisure activities ($p=0.013$), and not feeling rested after waking up ($p=0.033$). **Conclusion:** The prevalence of vocal handicap among the teachers was 34.62%. The associated factors highlighted were work-related (length of professional experience, relationship with students, and absenteeism due to vocal issues), as well as factors related to the lack of leisure activities, dissatisfaction with one's voice, and inadequate sleep.

Keywords: Working Conditions; Voice; Faculty; Voice Disorders.

Resumo

Introdução: A profissão docente é considerada pela Organização Internacional do Trabalho como a profissão com maior risco de distúrbios vocais ocupacionais. **Objetivo:** Investigar o nível de desvantagem vocal e os fatores associados entre professores de um colégio público da cidade de Florianópolis. **Métodos:** Trata-se de um estudo transversal. Foram aplicados os questionários CPV-P e IDV-10 em 82 dos 121 professores convidados. A variável dependente foi a autopercepção de desvantagem vocal, enquanto as variáveis independentes incluíram características sociodemográficas, situação funcional, ambiente e organização de trabalho, aspectos vocais, hábitos e estilo de vida. Os dados foram analisados descritivamente e por meio dos testes de hipóteses qui-quadrado de Pearson e Teste Exato de Fisher.

Resultados: Dentre os 82 professores, observou-se maior frequência do sexo feminino (63,41%), faixa etária de 40 a 59 anos (48,78%) e professores casados ou com união estável (47,56%). A prevalência de desvantagem vocal foi de 34,62%. Observou-se associação entre desvantagem vocal e menor tempo de atuação profissional ($p=0,020$), bom relacionamento com alunos às vezes ($p=0,012$), insatisfação com a voz ($p=0,025$), maior falta por alterações vocais ($p=0,001$), ausência de atividades de lazer ($p=0,013$) e sensação de não acordar descansado ($p=0,033$). **Conclusão:** A prevalência de desvantagem vocal entre os professores foi de 34,62%. Dentre os fatores associados, destacam-se aqueles relacionados ao trabalho (tempo de profissão, relacionamento com os alunos e faltas ao trabalho devido a alterações vocais) e fatores relacionados a falta de atividades de lazer, insatisfação com a voz e sono inadequado.

Palavras-chave: Condições de Trabalho; Voz; Docentes; Distúrbios da Voz.

Resumen

Introducción: La profesión docente es considerada por la Organización Internacional del Trabajo como la profesión con mayor riesgo de trastornos vocales ocupacionales. **Objetivo:** Investigar el nivel de desventaja vocal y los factores asociados entre los profesores de una escuela pública en la ciudad de Florianópolis. **Métodos:** Estudio transversal. Se aplicaron los cuestionarios CPV-P e IDV-10 a 82 de los 121 profesores invitados. La variable dependiente fue la autopercepción de desventaja vocal, mientras que las variables independientes incluyeron características sociodemográficas, estado funcional, ambiente y organización laboral, aspectos vocales, hábitos y estilo de vida. Datos fueron analizados descriptivamente y mediante las pruebas de Chi-cuadrado de Pearson y Exacta de Fisher. **Resultados:** Entre los 82 profesores, hubo una mayor frecuencia de mujeres (63,41%), con edades entre 40 y 59 años (48,78%), y profesores casados o en unión estable (47,56%). La prevalencia de desventaja vocal fue del 34,62%. Se observó asociación entre la desventaja vocal y una menor experiencia profesional ($p=0,020$), tener a veces una buena relación con los estudiantes ($p=0,012$), insatisfacción con la propia voz ($p=0,025$), aumento del ausentismo por problemas vocales ($p=0,001$), falta de actividades de ocio ($p=0,013$) y no sentirse descansado al despertar ($p=0,033$). **Conclusión:** La prevalencia de desventaja vocal entre los profesores fue 34,62 %. Los factores asociados identificados incluyeron aspectos laborales (tiempo de experiencia profesional, relación con los estudiantes y ausentismo por problemas vocales), así como factores relacionados con la falta de actividades de ocio, la insatisfacción con la propia voz y el descanso inadecuado.

Palabras clave: Condiciones de Trabajo; Voz; Docentes; Trastornos de la voz.

Introduction

Teachers' vocal health is a recurring theme in studies conducted in Brazil and abroad^{1,2}. Vocal disorders prevail among teachers, who rely on their voices to perform their functions effectively and often use them intensely³.

Indeed, the International Labour Organization (ILO) considers teaching to be one of the highest-risk professions for occupational voice disorders⁴. Estimates suggest that the prevalence of vocal disorders in the general population ranges from 6 to 15%, but among teachers, these values increase to 20-50%⁵.

Vocal disorders in teachers can be related to several factors, such as environmental conditions, biological factors, psychological disorders, and organizational barriers⁶. Furthermore, a lack of knowledge and skills in vocal use can exacerbate voice-related signs and symptoms⁷. In this scenario, vocal handicaps emerge as crucial aspects that affect both individuals who have dysphonia and those who are dissatisfied with their voices. To assess this self-perception of the impact of vocal changes, the Voice Handicap Index (VHI), translated and validated as *Índice de Desvantagem Vocal (IDV)* in Brazilian Portuguese⁸, is a pioneer in assessing the self-perceived impact of vocal changes⁹.

For a long time, a single, entirely causal relationship was assumed to exist between frequent voice use and the development of vocal problems. However, research has highlighted a more complex and multifaceted dynamic in this association^{10,11}. Understanding the challenges teachers face with their vocal health, especially after significant global changes such as the pandemic, becomes crucial for providing adequate support and implementing effective interventions. This requires investigating additional factors, including the functional situation, environment, and work organization. Furthermore, investigating the factors associated with vocal handicaps in public school teachers can contribute to the development of targeted interventions tailored to local needs.

Beyond health aspects, it is important to highlight that vocal problems have significant financial implications for teachers, who are more likely to miss work due to vocal disorders compared to other professions and may even result in the early termination of their teaching careers¹². This interconnection between health aspects and

financial impacts highlights the complexity of the challenges teachers face, highlighting the need for combined approaches that promote their comprehensive well-being. Furthermore, it reinforces the importance of scientific research in understanding the factors associated with these problems, enabling the development of evidence-based interventions that contribute to vocal health, quality of life, and the sustainability of teaching careers.

Given this context, the objective of this study was to investigate the level of vocal handicap and its associated factors among teachers at a public school in Florianópolis, Brazil.

Method

Type and place of study

This article is based on a cross-sectional epidemiological study. The sample consisted of 82 teachers out of the 121 invited from a public school affiliated with a Federal institution in Florianópolis. All participants agreed to the Free and Informed Consent Form (FICF) and agreed to participate in the research. This study was approved by the Human Research Ethics Committee of the Federal University of Santa Catarina, CAAE: 68308623.7.0000.0121 and opinion number 6.073.934. Information was provided on the procedures to be carried out through the FICF.

Research Instruments

Two instruments were applied, 1) the Vocal Handicap Index (VHI-10) questionnaire and 2) the Vocal Production Condition - Teacher (VPC-T) questionnaire.

Voice Handicap Index Questionnaire (VHI-10)

The VHI-10 is a protocol validated for Brazilian Portuguese as *IDV-10 (Questionário de Índice de Desvantagem Vocal)*, with psychometric properties of validity, reliability, and sensitivity⁸. It aims to show how a voice problem can interfere with daily life activities, and the higher the score, the greater the vocal handicap. The VHI-10 consists of a self-assessment questionnaire comprising ten questions, each to be answered on a scale of 0 to 4 points. On this scale, 0 (zero) corresponds to the option "never," and 4 (four) corresponds to "always." The total score is calculated by simply adding the answers and ranges from 0 (zero) to 40

points. A score of 0 (zero) indicates the absence of any voice handicap, while a score of 40 represents maximum voice handicap. In this study, according to Behlau et al. (2016)¹³, the cut-off score of 7.5 points was used to classify participants with a vocal disadvantage.

Vocal Production Condition -Teacher Questionnaire (VPC-T)

The Vocal Production Condition – Teacher (VPC-T) questionnaire is a crucial instrument for characterizing teachers' vocal profiles and working conditions in schools¹⁴. Composed of 62 questions, it is suitable for characterizing the conditions of the school environment and teachers' vocal profiles. The answers provide data on sociodemographic, lifestyle, occupation, teaching work environment, and organization variables. In this research, some questions were selected from the VPC – T.

Pilot testing

The questionnaire was tested with ten teachers who were not part of the target population for the research. Five teachers responded in the online format and five in the physical format (paper and pen). During this test, criteria related to the clarity, semantics, and content of each item in the instrument were analyzed, as well as the time required to complete the survey.

Participant recruitment and data collection

The questionnaires were implemented on the *Research Electronic Data Capture* (REDCap) platform¹⁵, hosted on the university's servers, and administered online. Participants received the instrument via email and WhatsApp after it had been submitted and approved by the Research Ethics Committee. For recruitment, a video invitation to participate in the research was made and sent via WhatsApp, along with banners displayed on the school's walls. All teachers were invited, resulting in a sample composed of teachers who worked from the initial years to high school. The data was collected between June and July 2023.

Dependent variable

The dependent variable of this study was the self-perception of vocal handicap (no; yes), obtained through the Vocal Handicap Index - VHI-10 protocol, validated for Brazilian Portuguese as *IDV-10*⁸.

Independent variables

Sociodemographic characteristics of the functional situation related to the work environment and organization and vocal aspects, habits, and lifestyle were analyzed. The variables were extracted from the Condition of Vocal Production of the Teacher (CVP-T) questionnaire. Regarding sociodemographic characteristics, the variables sex (male, female), age group (20-39, 40-59, 60 years or older), and marital status (single, married/common-law married, separated/divorced, widowed) were analyzed. Regarding the functional situation, the time of professional activity (up to 10 years, 11 years or more) and the hours spent in the classroom (up to 10 hours, 11-20 hours, 21-30 hours, 31-40 hours) were analyzed.

Regarding the work environment and organization, the analysis covered whether the perception of a noisy school (sometimes, always), satisfactory room acoustics (no, yes), room size adequate for the number of students (no, yes), adequate place for teachers to rest (no, yes), freedom to plan activities (no, yes), whether there are good relationships in the work environment (with colleagues and students) (sometimes, always) and whether there have been situations of violence against teachers and staff (no, yes).

Vocal aspects, habits, and lifestyle were covered, including whether the participant usually shouts (no, yes), speaks in an open space (no, yes), speaks while performing physical activities (no, yes), and speaks while carrying heavy objects (no, yes). Furthermore, it was verified whether the teacher received guidance on vocal care (no; yes), whether he/she was satisfied with his/her voice (no, yes), whether he/she missed work due to vocal changes (never, rarely, sometimes), whether he/she had leisure activities (no, yes), whether he/she smoked (no, yes), whether he/she consumed alcoholic drinks (no, yes) and whether he/she woke up feeling rested (no, yes).

Data analysis

The qualitative variables of the sample were described using absolute frequencies (n) and relative frequencies (%). To assess the difference in the proportions of vocal handicap (dependent variable) according to the independent variables of the study, Pearson's chi-square test was used. When the test assumptions were not met, Fisher's exact test was used. Analyses were considered statistically significant when the p-value <0.05 (5%) and analyzed using Stata¹⁴ software. Although 82 teachers participated in the study, only 78 answered the VHI-10 instrument. Participants who did not answer this variable were included in the overall descriptive analyses but excluded from the bivariate analyses involving the VHI-10.

Results

Eighty-two teachers participated in the study, most of whom were female (63.41%), aged between 40 and 59 years (48.78%), and married or in a stable relationship (47.56%). Most teachers analyzed had been working in the profession for 11 years or more (71.95%) and spent 11 to 20 hours in the classroom (69.51%). Furthermore, 85.37% reported that the school is always noisy,

63.41% indicated that the classroom acoustics are satisfactory, and 78.05% stated that the classroom size is adequate for the number of students. When asked about suitable places to rest, 48 teachers (58.54%) indicated that such places existed, and 69 teachers (86.25%) stated that they had the freedom to plan activities. The majority always had a good relationship with colleagues (70.00%) and students (65.00%). When asked if there had been any instances of violence against teachers and staff, 91.25% responded affirmatively (Table 1).

The prevalence of vocal handicap in the sample was 34.62% (n = 27). Female teachers had a proportion of vocal handicaps equal to that of male teachers, as well as 34.62% (p = 1.000) (Table 1).

The presence of vocal handicaps and the length of professional experience were associated, with a higher proportion of handicaps observed in teachers who had up to 10 years of experience (54.55%) compared to individuals with 11 years or more of experience (26.79%), with this difference being statistically significant (p = 0.020). Furthermore, a higher proportion of vocal handicaps was observed in teachers with a good relationship with students, "sometimes" (53.85%), compared to those who reported having a good relationship, "always" (25.00%) (p = 0.012) (Table 1).

Table 1. Description of the sample and proportion of vocal handicap according to sociodemographic characteristics, functional situation, environment, and work organization of teachers at a public school in the capital. Florianópolis, 2023.

Variable	n	%	Vocal handicap*				p-value
			No		Yes		
			n	%	n	%	
Sex							1.000 ^a
Male	30	36.59	17	65.38	9	34.62	
Female	52	63.41	34	65.38	18	34.62	
Age group							0.291 ^b
20 to 39	34	41.46	19	57.58	14	42.42	
40 to 59	40	48.78	28	73.68	10	26.32	
60 years or older	8	9.76	4	57.14	3	42.86	
Marital status							0.876 ^b
Single	28	34.15	16	61.54	10	38.46	
Married/Common-law married	39	47.56	26	68.42	12	31.58	
Separated/Divorced	14	17.07	8	61.54	5	38.46	
Widowed	1	1.22	1	100.0	-	-	
How long have you been a teacher?							0.020 ^a
Up to 10 years	23	28.05	10	45.45	12	54.55	
11 years or more	59	71.95	41	73.21	15	26.79	
How many hours a week do you spend with the students?							0.136 ^b
Up to 10 hours/week	8	9.76	7	100.0	-	-	
11 to 20 hours/week	57	69.51	33	60.00	22	40.00	
21 to 30 hours/week	14	17.07	9	64.29	5	35.71	
31 to 40 hours/week	3	3.66	2	100.0	-	-	
Is the school noisy?							0.739 ^b
Sometimes	12	14.63	8	72.73	3	27.27	
Always	70	85.37	43	64.18	24	35.82	
Are the room acoustics satisfactory?							0.985 ^a
No	30	36.59	19	65.52	10	34.48	
Yes	52	63.41	32	65.31	17	34.69	
Suitable room size?							0.118 ^a
No	18	21.95	9	50.00	9	50.00	
Yes	64	78.05	42	70.00	18	30.00	
Suitable places for teachers to rest							0.655 ^a
No	34	41.46	20	62.50	12	37.50	
Yes	48	58.54	31	67.39	15	32.61	
Do you have the freedom to plan activities?							0.499 ^b
No	11	13.75	6	54.55	5	45.45	
Yes	69	86.25	45	67.16	22	32.84	
Relationship with colleagues							0.464 ^a
Sometimes	24	30.00	13	59.09	9	40.91	
Always	56	70.00	38	67.89	18	32.14	
Good relationship with students							0.012 ^a
Sometimes	28	35.00	12	46.15	14	53.85	
Always	52	65.00	39	75.00	13	25.00	
Violence against teachers and staff							1.000 ^b
No	7	8.75	5	71.43	2	28.57	
Yes	73	91.25	46	64.79	25	25.21	

* Four participants did not answer the VHI-10 questionnaire.

^a - Pearson's Chi-square Test.

^b - Fisher's Exact Test

Most teachers used to shout (78.21%), speak in open spaces (97.44%), speak while engaging in physical activity (61.54%), and speak while carrying heavy objects (56.41%). The minority (39.74%) received guidance on vocal care, and 83.33% are satisfied with their voice. When asked about absences from work due to vocal changes, 58.97% said they never needed to (Table 2).

A higher proportion of vocal handicaps was ob-

served in teachers who were not satisfied with their voice (61.54%), compared to those who reported being satisfied (29.23%), with this difference being statistically significant ($p = 0.025$). Furthermore, a higher proportion of the outcome was observed in teachers who had to miss work due to vocal changes, “sometimes” (75.00%), compared to the other categories, (never = 21.74%) ($p = 0.001$) (Table 2).

Table 2. Description of the sample and proportion of vocal handicap according to vocal habits, use of voice in adverse conditions, and occupational repercussions of teachers at a public school in the capital. Florianópolis, 2023.

Variable	n	%	Vocal handicap*				p-value
			No		Yes		
			n	%	n	%	
Usually shouts							0.947 ^a
No	17	21.79	11	64.71	6	35.29	
Yes	61	78.21	40	65.57	21	34.43	
Usually speaks in open spaces							0.541 ^b
No	2	2.56	2	100.00	-	-	
Yes	76	97.44	49	64.47	27	35.53	
Usually talks while doing physical activity							0.851 ^a
No	30	38.46	20	66.67	10	33.33	
Yes	48	61.54	31	64.58	17	35.42	
He usually speaks while carrying heavy objects							0.184 ^a
No	34	43.59	25	73.53	9	26.47	
Yes	44	56.41	26	59.09	18	40.91	
Received guidance on vocal care							0.112 ^a
No	47	60.26	34	72.34	13	27.66	
Yes	31	39.74	17	54.84	14	45.16	
Satisfied with the voice?							0.025 ^a
No	13	16.67	5	38.46	8	61.54	
Yes	65	83.33	46	70.77	19	29.23	
Missed work due to vocal changes							0.001 ^b
Never	46	58.97	36	78.26	10	21.74	
Rarely	16	20.51	11	68.75	5	31.25	
Sometimes	16	20.51	4	25.00	12	75.00	

* Four participants did not answer the VHI-10 questionnaire.

^a – Pearson’s Chi-square Test.

^b – Fisher’s Exact Test

Table 3 shows that most teachers (62.82%) did not engage in leisure activities and did not smoke (93.59%). Regarding the consumption of alcoholic beverages, 82.05% reported using them; in turn, 76.92% reported feeling rested upon waking (Table 3).

An association was noted between vocal handicaps and leisure activities, with a higher proportion

of handicaps occurring in teachers who did not include these activities in their routine (44.90%) ($p = 0.013$). Furthermore, a higher proportion of vocal handicaps was observed in teachers who did not wake up rested (55.56%), compared to those who did (28.33%), with a statistically significant difference ($p = 0.033$) (Table 3).

Table 3. Description of the sample and proportion of vocal handicap according to habits and lifestyle of teachers at a public school in the capital. Florianópolis, 2023.

Variable	n	%	Vocal handicap*				p-value
			No		Yes		
			n	%	n	%	
Do you have leisure activities?							0.013 ^a
No	48	62.82	27	55.10	22	44.90	
Yes	29	37.18	24	82.76	5	17.24	
Smoking?							0.654 ^b
No	73	93.59	47	64.38	26	35.62	
Yes	5	6.41	4	80.00	1	20.00	
Drinking alcoholic drinks?							0.760 ^b
No	14	17.95	10	71.43	4	28.57	
Yes	64	82.05	41	64.06	23	35.94	
Wake up rested?							0.033 ^a
No	18	23.08	8	44.44	10	55.56	
Yes	60	76.92	43	71.67	17	28.33	

* Four participants did not answer the VHI-10 questionnaire.

^a – Pearson's Chi-square Test.

^b – Fisher's Exact Test

Discussion

The prevalence of vocal handicaps among teachers was 34.62%. Through hypothesis testing, an association was observed between vocal handicaps and shorter professional experience, good relationships with students at times, dissatisfaction with the voice, missing work due to vocal changes, lack of leisure activities, and the feeling of not waking up rested.

A finding of lower prevalence of vocal handicap was observed in a survey of teachers from public and private schools in Campinas and São Paulo (29.00%)¹. In the Londrina region, a lower prevalence was also observed among elementary and high school teachers in public schools, at 18.8%.⁶ It is noteworthy that, in this last study, researchers used a cut-off point of 11 points for VHI-10, which may explain the lower prevalence found in comparison with the present study.

Regarding working time, a higher proportion of vocal handicaps was found in teachers with less than ten years of experience. Similar findings were observed in research conducted in France¹⁶ and India¹⁷. Long work experience can explain the result, as it provides teachers with a better understanding of vocal hygiene and proper voice use, facilitating the management and adaptation of voice style during professional practice, reducing the impact of

vocal tension, and preventing the development of vocal disorders¹⁸.

A notable finding was that teachers who reported always having a good relationship with their students had a lower proportion of voice problems. In other words, the quality of the relationship between teachers and students is linked to a lower frequency of voice handicaps among teachers, suggesting that a positive and harmonious classroom environment can benefit teachers' vocal health. In addition to this finding, researchers in the United States have identified a social consequence associated with voice disorders: a decrease in perceived credibility, which can negatively impact teachers' professional success¹⁹.

A higher proportion of vocal handicaps was observed among teachers who reported being dissatisfied with their voices. When teachers are dissatisfied with their voice, they may be more attentive to any vocal difficulties or changes, resulting in greater identification and reporting of vocal disadvantages. It is also worth noting that vocal problems are strongly correlated with emotional factors²⁰. Therefore, it is essential to consider both physical and emotional aspects when approaching teachers' vocal health.

Overall, 20.51% of teachers missed work (sometimes) due to vocal problems, but it is noteworthy that among teachers with vocal handicaps, 75% of them miss work (almost always) for this

same reason. This finding is corroborated by Me-deiros and Vieira (2019)²¹, whose study involved a representative sample of basic school teachers. The authors highlighted the high prevalence of short-term absences from work due to vocal disorders associated with the presence of other medical conditions²¹. This fact highlights the importance of recognizing work-related voice disorder (WRVD) as a highly prevalent condition, the search for which is a non-linear process, characterized by advances and setbacks in Brazil²². This reality underscores the continued importance of coordinated efforts and investments in research, education, and clinical practice to mitigate the impact of WRVD and improve the quality of life of affected workers.

It is noteworthy that 44.90% of teachers with vocal handicaps did not engage in leisure activities, suggesting a possible association between the absence of these activities and vocal condition. Many teachers face an accumulation of roles, known as a double shift, which encompasses professional activity and domestic tasks, especially among women. This intense workload can contribute to the development of stress and mental exhaustion²³. Professional life often restricts their activities, and teachers relegate the importance of leisure. In this context, physical activity emerges as a vital leisure activity. A recent population-based study conducted among teachers from public schools in Minas Gerais found that low levels of physical activity are associated with a higher prevalence of vocal problems, even after controlling for confounding factors²⁴.

A higher proportion of vocal handicaps (55.56%) was observed among teachers who reported not waking up rested. These data suggest a relationship between sleep quality and vocal quality. Previous research has suggested that teachers with poorer sleep quality may have poorer voice quality²⁵. The relationship between inadequate sleep and vocal handicap underscores the need for interventions that promote healthy sleep habits among teachers, aiming to enhance both overall health and vocal quality. In this context, a systematic review²⁶ revealed that teachers who sleep more than six hours a day are less likely to report vocal disorders. This reinforces the importance of ensuring adequate rest time to prevent vocal problems and promote teacher well-being.

Finally, the high frequency (91.25%) of teachers who reported having witnessed episodes of

violence against teachers and staff stands out as a worrying finding. This result reflects an alarming reality in Brazilian educational institutions and reinforces the growing debate about the precariousness of the school environment. Recurrent exposure to violence is associated with severe impacts on the mental health of education professionals, including severe burnout²⁷. It is worth highlighting that this phenomenon is not limited to the school context itself but is intrinsically related to structural factors. A study indicated that violence against teachers is more prevalent in public schools located in peripheral regions, marked by high rates of urban violence²⁸. These findings highlight the urgent need for intersectoral policies that promote safer school environments, value teaching work, and address the social determinants of school violence.

Some limitations in interpreting the results of this study should be considered. Firstly, as this is a cross-sectional study, it is not possible to establish cause-and-effect relationships. Furthermore, the instrument used in this study to classify self-perception of vocal handicaps may present different cut-off points adopted by other researchers, which may lead to variations in the prevalence found. Furthermore, it was not possible to reach the entire target population, thus, the result was a sample that was not representative of the entire population. Finally, the findings of this study cannot be generalized to other populations.

Given the findings, the need to strengthen public policies aimed at workers' health is evident, with actions to promote, prevent, and rehabilitate vocal health so that teachers have the means and conditions necessary to use their voices at work without compromising their health and quality of life.

Conclusion

This study demonstrated a prevalence of 34.62% of vocal handicaps among teachers at a public school in Florianópolis. Factors such as length of service, relationships with students, dissatisfaction with the voice, absences from work due to vocal changes, lack of leisure activities, and inadequate sleep were associated with this condition. These findings underscore the need to enhance occupational health surveillance for teachers, considering the factors that exacerbate diseases and the vulnerability of this group. This can contribute to improvements in organizational

and structural issues within the work environment, in addition to providing support for actions aimed at the rational use of voice and raising awareness of vocal health among this highly affected population.

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