

Work absenteeism due to voice disorders in Brazilian schoolteachers

Ausência ao trabalho por distúrbio vocal de professores da Educação Básica no Brasil

Ausencia del trabajo por disturbios vocales en profesores de Educación Básica en Brasil

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Abstract

The study aimed to investigate the prevalence and duration of work absenteeism due to voice disorders in Brazilian schoolteachers and the association with work-related factors and health status. This was a cross-sectional study with a representative sample of 6,510 female and male schoolteachers in basic education, from October 2015 to March 2016. The dependent variable was the teacher's report of some work absence due to a voice problem in the previous 12 months. The independent variables related to work conditions and health status. A descriptive analysis was performed of the prevalence and duration of work absences due to voice problems. The association between the target event and the other variables was measured as the prevalence ratio with 95% confidence intervals, using Poisson regression. The main reason for teachers missing classroom work was voice disorders (17.7%), and most absences (78%) were short (seven days or less). In the final multivariate model adjusted by gender, higher prevalence of absence due to voice disorders was associated with schoolteachers in the North and Northeast of Brazil, longer time commuting to and from work, self-report of occupational disease, visit to health services, and report of psychological and respiratory problems during the same 12-month period. There was a high prevalence of short work absences due to voice problems, associated with comorbidities. Macrostructural factors suggest the social nature of the illness process and work absenteeism in Brazilian schoolteachers.

Absenteeism; Voice Disorders; School Teachers

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Introduction

Symptoms such as hoarseness, altered and/or tired voice after short periods of speaking, and effort in speaking indicate difficulty in use of the voice, with a high prevalence in schoolteachers compared to other occupational groups^{1,2}. Recent studies point to the association of voice disorders with individual and occupational factors in the school context³.

Precarious work conditions and occupational stressors increase the demand on use of the voice and have negative effects on health⁴, leading in turn to functional incapacity and work absenteeism⁵. Teachers' absenteeism places a heavy financial burden on society and requires replacing their labor, consequently jeopardizing the quality of teaching in schools³.

Voice disorders specifically increase the odds of teachers missing work⁶. A literature review showed that female gender, report of voice complaints during professional training, psychological and respiratory problems, witnessing episodes of violence in the classroom, greater severity of the voice problem, and suffering the impact of the voice on the teacher's quality of life were associated with absenteeism due to voice disorders⁷. Meanwhile, evidence shows that even when sick, many workers remain on the job and in their occupations⁸, a phenomenon known as presenteeism. Schoolteachers are able to continue working even with voice symptoms, showing that elucidation of the situation is not simple.

Schools are part of broader social relations, simultaneously participating in their development, linking to different dimensions and spaces in the social life of schoolteachers⁹. All these aspects are important when analyzing work conditions. Work conditions and ways of living are intimately linked both to the maintenance of health and to the emergence and aggravation of disease states. A series of studies on the theme^{1,7,10,11} identified health inequalities within and between countries. Inequalities in work relations, employment, and social protection are key elements in addressing health conditions and disability in occupational groups.

Brazil experienced a 32.9% increase in the number of schoolteachers in basic education (preschool through secondary plus youth and adult education) from 2002 to 2013, especially in the municipal systems. Data from the *Brazilian National Household Sample Survey* (PNAD) conducted by the Brazilian Institute of Geography and Statistics (IBGE) reveal inequalities in Brazilian schoolteachers' conditions, including in relation to their own education, average workdays, and retention in the teaching career in the face of increasing precarization of teaching contracts, while real wage increases for teachers lag behind those of other university-level professionals¹². However, little is known about the relationship between regional and administrative inequalities in schools and the health system and teachers' absenteeism due to voice disorders.

The current study thus aimed to investigate the prevalence and duration of Brazilian schoolteachers' work absences due to voice disorders and the associations with occupational factors and health status.

Methods

This was a cross-sectional study with a representative sample of 6,510 schoolteachers working in basic education (preschool through secondary plus youth and adult education), both females and males, from October 2015 to March 2016. The sample calculation estimated a minimum participation of 6,500 teachers out of a total population of 2,229,269 schoolteachers, stratified by states and the Federal District, urban versus rural areas, sex and age of the schoolteachers, employment contract, type of school administration, and grade levels. The study adopted a 95% confidence level and 1,2% maximum error. There was a loss of 14.8% due to refusals and situations in which it was not possible to conduct the interview with the selected individual.

The study used administrative data from the 2014 *School Census* and telephone interviews with classroom schoolteachers, the Educatel Brazil, with a 54-item questionnaire.

The dependent variable was based on the interviewee's response to the following questions: "In the last 12 months, have you missed at least one day of work (for whatever the reason)?", "Did you miss work because of health problems?", "What was the health problem?" The health reasons for

missing work were: psychological problems (depression, stress, anxiety), voice problems (hoarseness, dysphonia), respiratory problems (asthma, bronchitis, rhinitis, sinusitis), problems in the upper limbs (bursitis, tendinitis), back problems (lumbago, sciatic pain, disc hernia), and other problems not specified above.

Teachers that reported having missed work in the previous 12 months due to voice problems were compared to those who had not missed work for the same reason. In order to better describe the prevalence of this event, the total number of days of work absences was recorded.

Two groups of independent variables were selected. The first used administrative data from the *School Census*: major geographic region, school's census area (urban versus rural), type of school administration, grade level, and type of teaching contract. The second group related to the answers to the telephone interview: commuting time to and from school; visit to a health service due to a reported health problem (public or private health care); medical diagnosis of the health problem as an occupational or professional illness, workers' compensation received due to sick leave, and report of work absenteeism due to psychological or respiratory problems.

The data were analyzed with Stata, version 12.0 (<https://www.stata.com>), using the set of commands for studies with complex samples (survey). Specifically, a descriptive analysis was conducted of the prevalence and duration of absences due to voice problems. The association between the target event and the other variables was based on prevalence ratio (PR) and 95% confidence intervals (95%CI), using bivariate and multivariate Poisson regression with robust variance.

All the variables associated with the dependent variable in the bivariate analysis at $p \leq 0.20$ were included in the intermediate multivariate models, considering each group of variables, calculating the adjusted prevalence ratios. Backward elimination was used, starting with the most distal variables in each model and maintaining the variables with 5% significance. In the final model, the variables for administrative data (first group) were considered more distal and the variables from the second group more proximal. Gender was included in the adjustment of the final Poisson regression model with robust variance. The final model maintained the explanatory variables with significance at 5%.

Information on the study project's issues, methodological assumptions, procedures, and stages have been described in detail elsewhere¹³. The study complied with the principles of the *Declaration of Helsinki* and *Resolution CNS n. 446/2011* of the Brazilian National Health Council. The project was approved by the Ethics Research Committee of the Federal University of Minas Gerais (review n. 1.305.863).

Results

The principal health problems that kept teachers out of the classroom were voice disorders (17.7%), followed by respiratory problems (14.6%) and psychological problems (14.5%). During the interviews, teachers could report absences for more than one health problem during the 12-month period. The analysis showed 78%, 13.5%, and 8.5% of teachers having missed work due to voice disorders lasting one to seven, eight to fifteen, and more than 15 days, respectively.

The bivariate analysis showed statistically significant associations ($p \leq 0.05$) between geographic region (North and Northeast), teaching in more than one school administration, teaching in primary school or in more than one grade level, and having at least one stable teaching contract and work absence from voice disorders. In relation to health status, there was an association with longer commuting between home and work, visit to a health service, voice disorder diagnosed as an occupational illness, having received workers' compensation, and reporting other reasons for work absence (psychological and respiratory problems) (Table 1).

In the final multivariate model adjusted for gender, the highest likelihood of missing work due to voice disorders was in the group of schoolteachers from the North and Northeast regions of Brazil, those taking longer to commute to work, having gone to a health service, diagnosis of the voice disorder as occupational illness, and absence due to psychological and respiratory problems during the same 12-month period (Table 2).

Table 1

Prevalence of work absenteeism due to voice disorders in schoolteachers according to work and health conditions, and bivariate association. Educatel Brazil, 2015-2016.

Factors	Work absence due to voice problems (%)	PR	95%CI
Location			
Urban	17.3	1.00	
Rural	20.2	1.70	0.99-1.38
Geographic region			
South	13.6	1.00	
Southeast	16.3	1.20	0.99-1.44
Central	12.7	0.93	0.75-1.17
Northeast	22.0	1.62	1.35-1.93
North	21.3	1.56	1.30-1.89
School administration			
State	16.1	1.00	
Municipal	18.9	1.17	0.97-1.41
Private	15.2	0.94	0.74-1.19
Other *	19.2	1.19	1.00-1.40
Grade level			
Youth, adult, and vocational	13.4	1.00	
Preschool	13.8	1.03	0.73-1.46
Primary	18.5	1.38	1.04-1.84
Middle	21.4	1.59	1.17-2.17
Other *	18.3	1.37	1.05-1.79
Teaching contract			
Private/Covered by labor laws	14.6	1.00	
Temporary	13.3	0.92	0.71-1.19
Public admission/Tenured/Stable	20.3	1.39	1.13-1.71
Stable and private or temporary	21.3	1.29	1.15-1.85
Other *	15.3	1.05	0.80-1.38
Total commuting time (minutes)			
10-20	14.7	1.00	
21-50	18.8	1.28	1.08-1.51
≥ 51	19.9	1.35	1.15-1.59
Visit to a health service			
No	3.2	1.00	
Yes	33.6	10.5	8.06-13.3
Diagnosed as work-related disease			
No	11.7	1.00	
Yes	45.6	3.92	3.47-4.42
Workers' compensation			
No	17.2	1.00	
Yes	27.9	1.62	1.25-2.10
Absence due to emotional problems			
No	13.3	1.00	
Yes	43.8	3.30	2.29-3.74
Absence from respiratory problems			
No	12.0	1.00	
Yes	51.1	4.25	3.77-4.80

95%CI: 95% confidence interval; PR: prevalence ratio.

* Various combinations of the categories of variables.

Discussion

This nationwide study, representative of rural and urban areas, states, different types of school administration, age brackets, and teachers' gender is unique in identifying the primacy of voice disorders among health reasons for work absenteeism.

The prevalence was lower than in other studies that used the same 12-month reference period: 22.5% of schoolteachers in Brazil ² and 46.6% in France ⁶. Methodological differences like selection of the target population and lack of consensus on measurement of absenteeism, in addition to environmental and organizational differences that can lead to work absenteeism due to voice disorders, besides the condition itself, may explain the above-mentioned disparities. A comparative study found that despite the distinct economic and social contexts in schoolteachers' work in Brazil and France, in both cases, recognition by students and teamwork were important for maintaining teachers' health ¹⁴.

Most of the work absences were short. This result is consistent with the literature: 1 to 5 days in American schoolteachers ¹⁵ and 1 to 3 days in New Zealand schoolteachers ¹⁶, especially in women when compared to men. Teachers' absence from the classroom for a few days may be a recourse to attenuate symptoms when they realize they are unable to teach class ¹⁷. Teachers may use the strategy of missing a few days in order to avoid taking longer sick leave, known "*missing work to avoid missing work*" ¹⁴. However, presenteeism, or working even while ill, is a risk factor for future absenteeism and lower self-rated health ¹⁸.

Table 2

Final multivariate model of associations between work and health characteristics and work absenteeism due to voice disorders. Educatel Brazil, 2015-2016.

Factors	adjusted PR	95%CI
Geographic region		
South		1.00
Southeast	1.10	0.94-1.30
Central	0.99	0.81-1.21
Northeast	1.48	1.26-1.74 *
North	1.55	1.31-1.83 *
Total commuting time (minutes)		
10-20		1.00
21-50	1.17	1.01-1.35 *
≥ 51	1.19	1.03-1.38 *
Visit to a health service		
No		1.00
Yes	5.99	4.6-7.80 *
Diagnosed as health-related disease		
No		1.00
Yes	1.56	1.38-1.77 *
Absence due to emotional problems		
No		1.00
Yes	1.41	1.23-1.61 *
Absence due to respiratory problems		
No		1.00
Yes	2.00	1.76-2.27 *

95%CI: 95% confidence interval; PR: prevalence ratio.

Note: model's adjustment considered all the variables shown in the table and teacher's gender.

* p < 0.05.

Voice rest suffices to stabilize the condition in many cases, enabling teachers to return to work quickly. Teachers also frequently need to miss work or to arrange with the school's administration to reduce their classroom hours or take part of the day off in order to stabilize their voice ¹⁹.

Many areas of Brazil lack an occupational health service to perform a voice assessment, identify symptoms, and conduct vocal cord tests to diagnose and monitor teachers' clinical status and situations of absenteeism. Not all teachers with voice disorders have to miss work. Individuals with voice disorders may or may not consider themselves "sick" based on their physical and social limitations ²⁰. It is thus not possible in this study to gauge the severity of the voice problems in schoolteachers that missed work. Importantly, schoolteachers prioritize the goals of teaching their students and covering the classroom plan, potentially to the detriment of their own health ¹⁹. Among schoolteachers there are movements of resistance and struggle against the dissatisfaction and disqualification resulting from the work's organization, aimed at safeguarding health and pleasure in teaching ¹⁴.

Eight and a half percent of schoolteachers in this study had missed work for more than 15 days due to voice problems. A study has shown that the longer a person is absent from work, the lower the odds of returning and the higher the risk of recurrent sick leave and early retirement due to disability ²¹. Given the chronic nature of voice disorders, absenteeism becomes recurrent and probably longer, especially in the presence of persistently precarious work conditions ¹⁷. The way school administrations deal with teachers' illness and the precariousness of environmental resources can limit the possibilities for regular teachers to deal with risk factors for voice disorders.

Teachers' absenteeism jeopardizes relations with students and achievement of the school's educational goals, besides weakening social ties with other member of the school community ¹¹. The administration's limitations in dealing with short absences, failing to guarantee substitute teachers, disrupts the school with the overload on teachers that are present, besides conflicts between coworkers ¹⁹.

The National Plan for Education emphasizes the need to overcome prevailing inequalities, especially in relation to the supply and valorization of teachers ²², notably by improving work and health conditions. The current study's results thus highlight the relevance of addressing issues in the school's broader context when attempting to understand schoolteachers' absenteeism due to voice disorders.

No differences were observed between rural and urban schools, corroborating the results of a study on voice disorders in Nigerian schoolteachers ¹. The results reported by Rezende et al. ²³ for this sample evidenced higher frequency of exposure to intense noise in urban schools compared to rural schools. Noise in school has been considered one of the main triggering factors for voice disorders ²⁴. In addition to census area (urban versus rural), other factors need to be examined such as the school's acoustic environment and number of students per school, among others.

Although the teacher absenteeism rate was higher in public schools compared to private, the difference was not statistically significant. In the bivariate analysis, having at least one stable teaching contract was associated with the target outcome, but it did not remain in the adjusted intermediate model. As for type of employment contract, the data do not show that schoolteachers with job stability tend to have more work absences. A study of 653,264 workers failed to show a difference in the incidence of sick leave when comparing temporary versus stable work contracts ²⁵. The expansion of social security coverage may favor reporting of symptoms in order to obtain medical leave ¹⁰. It is also likely that coercive measures to control absenteeism, like bonuses for work attendance ¹⁹, explain the lack of statistically significant differences in the above-mentioned variables after adjusting the model.

Teaching in the municipal school system or under more than one administration and teaching in primary or middle school or in more than one grade level remained associated in the intermediate multivariate model but lost statistical significance in the final model. In education, the quality of teaching is believed to suffer a direct impact from the fragmentation of teachers' workday between schools and/or between school systems ¹², potentially affecting teachers' health. Teachers that reported working in more than one school system or in more than one grade level could be considered a proxy for longer workdays and heavier voice overload. However, this is not the only possibility for overload, since teachers may also work long hours in the same school or in schools within the same system.

The study showed that schoolteachers that teach children starting at seven years of age and into middle school miss more work due to voice disorders when compared to those in adult education. Another study showed that teaching in earlier grades may be related to heavier demand on the vocal

cords and increased risk of voice disorders and absenteeism in schoolteachers²⁶. Further research is needed on voice disorders and teachers' absenteeism according to grade levels.

As for geographic region, the results showed higher absenteeism rates from voice disorders in the North and Northeast of Brazil. Regional inequalities affecting these regions may explain such discrepancies. In this specific case, absences were associated with the schools' location in socioeconomically underprivileged areas¹¹. Such areas are likely to have a higher concentration of schools with precarious work conditions, generally associated with higher teacher absenteeism rates.

Distance from home to school was associated with increased prevalence of work absenteeism from voice disorders. Long commuting can reduce the time for rest and leisure-time activities, compromising recovery from work-related strain. No previous studies were found on the influence of commuting time on health events.

Having consulted a health service was significantly associated with work absence due to voice disorders. The current study does not allow stating the reason for the search for care (e.g., regular follow-up by an occupational health department, clinical checkup, treatment) or whether there was some other illness to explain the demand for care. A previous result indicated an association between self-reported use of medical care for voice conditions and the odds of teachers missing work due to voice problems²⁷. Meanwhile, some studies have shown the effect of avoiding medical care in the presence of a voice disorder¹⁶. Such avoidance is attributed both to limited self-perception of voice symptoms¹⁵ and issues with the prevailing school administration models^{19,28}. Other reasons may also be related to avoidance behavior: priorities with care for other family members, time constraints, and financial limitations¹⁵. Procrastination can further aggravate the voice problem and increase the costs for both the teacher and the school system⁵.

Nearly half (45.6%) of schoolteachers that missed work due to voice problems reported a medical diagnosis of the problem as an occupational illness. Nearly one-third of women teachers that had missed work (27.9%) said they had received workers' compensation for the time missed, although this association did not reach statistical significance.

Under Brazilian legislation, common vocal cord lesions in situations involving voice overload are not classified as work-related²⁹. This study's results suggest that despite these legal limitation, teachers' voice problems were being diagnosed as occupational. This finding is unprecedented and expands the arguments in the social debate on official recognition of occupational diseases. In Brazil, voice disorder as a work-related disease is only subject to mandatory reporting in the states of Rio de Janeiro (since 2008) and Alagoas (since 2012). A protocol in this direction has just been finalized and is ready for publication by the Ministry of Health³⁰.

It is possible to interpret the apparent paradox when analyzing the strength of surveillance activities for teachers' health. The incorporation of surveillance with systematic analysis of work-related accidents and diseases and absenteeism can be useful in planning and assessing health and social security policies. A previous study found lower prevalence of diagnosis of voice disorders in the group that reported not having periodic health checkups³.

Lack of recognition of voice disorder as a work-related condition decreases the odds of obtaining workers' compensation²⁹. The fact that voice disorder as a work-related disease is not included in the Social Security list for workers' compensation hinders the proof of causal nexus, making the process of recognition longer and costlier³⁰. This interpretation can be evoked to discuss and explain the observed lack of statistical significance. Workers' compensation benefits are granted in more serious cases, probably for schoolteachers that are no longer in the school. Importantly, they were not captured by the current survey and thus represent an important selection bias.

The relationship between voice disorders and respiratory diseases^{2,3} or psychological disorders^{6,31} is well documented, corroborated by the Educatel results. The statistically significant association between episodes of depression, anxiety, and upper airway problems and work absenteeism due to voice disorders had been reported in a previous study¹⁷. It is reasonable to posit that the juxtaposition of voice disorders and respiratory and psychological problems reduces classroom performance and predisposes to work absenteeism.

This study found that work absence due to respiratory problems was associated with a twofold increase in the likelihood of absence due to voice disorders. The schoolteachers reported absence due to such problems as asthma, bronchitis, rhinitis, and sinusitis, as cued by the interviewer. Thus,

there was no overlapping between the reported respiratory problems and laryngitis, classified as a respiratory disease according to the International Classification of Disease, 10th revision (ICD-10). Another study showed that allergies, sinusitis, and laryngitis were the most common diseases among schoolteachers when compared to other occupations². Chalk dust, other particulate matter, irritant chemical substances (cleaning products, paint, and ink used in school during classroom hours) are triggers for airway diseases that can aggravate voice disorders.

In the final model, absences due to psychological problems increased by 41% the likelihood of absence due to voice disorders during the same period. A study on the Malaysian Peninsula found that work absenteeism, greater impact on quality of life, mental health problems, and high anxiety rates in schoolteachers were significantly associated with voice disorders³¹. Teachers with voice symptoms present more episodes of depression when compared to those without such symptoms⁶.

Some limitations should be considered when interpreting these results. The study did not interview schoolteachers that were on leave from work, with possible biases on the prevalence of the target outcome, absenteeism due to voice disorders. The study's participants can be considered relatively healthy, since schoolteachers were only eligible for the study if they were teaching in the classroom, thus characterizing the healthy worker effect. There may have been a recall bias due to the relatively long reference period (12 months). The scarcity of studies on schoolteachers' health comparing different school grade levels, census area, type of school administration, and employment contracts hinder the comparison of the observed results. Given the study's exploratory nature, multiple risk factors were explored, and no specific hypothesis was tested. Brazil's continental size and diversity of educational policies suggest the need to analyze teachers' real work to gain a better understanding of absenteeism.

Meanwhile, the combination of administrative data and interviews in a nationally representative sample (6,510 teachers) lends strength to the results. The approach to different health reasons for teachers missing classroom work allows a broader understanding of the health-disease process in this occupational group. The high response rate is another strength, making it unlikely for non-response to compromise the pattern of effect estimates or the interpretation of the study's results.

Finally, we highlight the value of the stratified sampling method, the sample's random nature, and the statistical adjustments to the sample weights, supporting generalization of the observed results³². The study produced a nationwide diagnosis of schoolteachers' health and work conditions, with the potential for the method's reproducibility in other studies.

Public policies to minimize social inequalities and precarious work conditions in Brazilian schools and workers' health are essential for valuing teachers and reducing absences due to voice disorders, a public health problem. The recognition of the relationship between voice disorders and teaching can favor investments to improve the school environment and school organization, with health benefits for schoolteachers.

The Health Care Network of the Brazilian Unified National Health System (SUS) through the protocol on voice disorder as a work-related disease (DVRT in Portuguese) should identify and report cases of voice disorders (R49.0) to be included in the Information System on Diseases of Notification (SINAN Net). It is indispensable to expand and upgrade the staff of speech therapists allocated in the Centers for Workers' Health Rehabilitation (CERESTs) in order to develop activities in health promotion, prevention, follow-up, adaptation, and referrals for rehabilitation in cases of absenteeism related to voice disorders.

The elaboration of surveillance activities in workplaces and work processes should aim at early intervention to avoid aggravation of voice problems and recurrent work absences. Such measures should extend beyond behavioral training for schoolteachers and includes space for discussion in order to learn and seek solutions to the voice overload in the presence of stress in dealing with students and families in situations of vulnerability (poverty, violence, drugs), with impacts on classroom discipline. Administrative measures aimed at dealing with short work absences can help reduce conflicts between coworkers and help improve teachers' overall health.

Interventions are needed to control noise in schools, in addition to materials for greater comfort in use of the voice, such as a variety of teaching resources and microphones when necessary. Pauses for voice rest during classroom hours and programmed interventions by teams of health professionals (speech therapists, psychologists, physical therapists, physical education teachers, physicians, social

workers), work safety engineers, and school administrators should allow more adequate conditions in keeping with each school's reality. At the level of individual care, on-site observation is recommended, with planned training sessions targeted to strategies for self-protection developed and implemented by the schoolteachers, with incentives for the adoption of healthy habits such as a balanced diet and including safe drinking water.

Conclusion

The study showed a high prevalence of short work absences due to voice disorders, associated with the presence of comorbidities. Macrostructural factors indicate the social nature of teachers' illness process and work absenteeism.

The higher prevalence of work absences due to voice disorders in the North and Northeast of Brazil indicate the need to consider social inequalities in Brazil when making budget allocation decisions. The statistical association between longer commuting and voice disorders deserves further investigation.

Official recognition of voice disorders as work-related diseases and the implementation of occupational surveillance systems are important measures. The identification of work absenteeism due to health problems in a nationwide sample of schoolteachers offered clues for setting priorities in interventions and public policies in education.

Contributors

A. M. Medeiros participated in the study conception and design, data analysis and interpretation, and writing of the article. M. T. Vieira participated in the study conception and design, critical review, and approval of the final version of the paper.

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References

1. Akinbode R, Lam KB, Ayres JG, Sadhra S. Voice disorders in Nigerian primary school teachers. *Occup Med (Lond)* 2014; 64:382-6.
2. Behlau M, Zambon F, Guerrieri AC, Roy N. Epidemiology of voice disorders in teachers and non-teachers in Brazil: prevalence and adverse effects. *J Voice* 2012; 26:665.e9-18.
3. Assunção AA, Bassi IB, Medeiros AM, Rodrigues CS, Gama ACC. Occupational and individual risk factors for dysphonia in teachers. *Occup Med (Lond)* 2012; 62:553-9.
4. Ubillos S, Centeno J, Ibañez J, Iraurgi I. Protective and risk factors associated with voice strain among teachers in Castile and Leon, Spain: recommendations for voice training. *J Voice* 2015; 29:261.e1-12.

5. Cantor Cutiva LC, Burdorf A. Medical costs and productivity costs related to voice symptoms in Colombian teachers. *J Voice* 2015; 29:776.e15-22.
6. Nerrière E, Vercambre MN, Gilbert F, Kovess-Masféty V. Voice disorders and mental health in teachers: a cross-sectional nationwide study. *BMC Public Health* 2009; 9:370.
7. Moselli LDL, Assunção AA, Medeiros AA. Absenteísmo por distúrbios da voz em professores: revisão da literatura, 2005-2015. *Distúrb Comun* 2017; 29:579-87.
8. Roelen CAM, Koopmans PC, Anema JR, van der Beek AJ. Recurrence of medically certified sickness absence according to diagnosis: a sickness absence register study. *J Occup Rehabil* 2010; 20:113-21.
9. Dourado LF, Oliveira JF. A qualidade da educação: perspectivas e desafios. *Cad CEDES* 2009; 29:201-15.
10. Virtanen M, Kivimäki M, Elovainio M, Vahtera J, Ferrie JE. From insecure to secure employment: changes in work, health, health related behaviours, and sickness absence. *Occup Environ Med* 2003; 60:948-53.
11. Virtanen M, Kivimäki M, Pentti J, Oksanen T, Ahola K, Linna A, et al. School neighborhood disadvantage as a predictor of long-term sick leave among teachers: prospective cohort study. *Am J Epidemiol* 2010; 171:785-92.
12. Departamento Intersindical de Estatística e Estudos Econômicos. Transformações recentes no perfil do docente das escolas estaduais e municipais de educação básica. Nota técnica 2014; (124). http://www.dieese.org.br/nota_tecnica/2014/notaTec141DocentePnadvf.pdf.
13. Assunção AA, Medeiros AM, Claro RM, Vieira MT, Maia EG, Andrade JM. Hypotheses, design and instruments of the Educatel Study, Brazil, 2015/2016. *Cad Saúde Pública* 2019; 35 Suppl 1:e00108618.
14. Brito J, Bercot R, Horellou-Lafarge C, Neves MY, Oliveira S, Rotenberg L. Saúde, gênero e reconhecimento no trabalho das professoras: convergências e diferenças no Brasil e na França. *Physis (Rio J.)* 2014; 24:589-605.
15. Da Costa V, Prada E, Roberts A, Cohen S. Voice disorders in primary school teachers and barriers to care. *J Voice* 2012; 26:69-76.
16. Leão SH, Oates JM, Purdy SC, Scott D, Morton RP. Voice problems in New Zealand teachers: a national survey. *J Voice* 2015; 29:645.e1-645.e13.
17. Medeiros AM, Assunção AA, Barreto SM. Absenteeism due to voice disorders in female teachers: a public health problem. *Int Arch Occup Environ Health* 2012; 85:853-64.
18. Skagen K, Collins AM. The consequences of sickness presenteeism on health and wellbeing over time: a systematic review. *Soc Sci Med* 2016; 161:169-77.
19. Medeiros AA, Assunção AA, Lara e Lana MA, Barreto SM. Distúrbios da voz: representações sociais por professores em tratamento fonoaudiológico. *Distúrb Comun* 2016; 28:434-43.
20. Giannini SPP, Latorre MRDO, Ferreira LP. Distúrbio de voz: definição de caso em estudos epidemiológicos. *Distúrb Comun* 2016; 28:658-64.
21. Koopmans PC, Bultmann U, Roelen CA, Hoedeman R, van der Klink JJ, Groothoff JW. Recurrence of sickness absence due to common mental disorders. *Int Arch Occup Environ Health* 2011; 84:193-201.
22. Secretaria de Articulação com os Sistemas de Ensino, Ministério da Educação. Planejando a próxima década: conhecendo as 20 metas do Plano Nacional de Educação. http://pne.mec.gov.br/images/pdf/pne_conhecendo_20_metas.pdf (acessado em 27/Abr/2016).
23. Rezende BA, Medeiros AM, Marinho A, Assunção AA. Prevalência de ruído ocupacional intenso percebido pelos professores da educação básica no Brasil. *Rev Bras Epidemiol*; in press.
24. Zenari-Simões M, Bitar ML, Nemr NK. Efeito do ruído na voz de educadoras de instituições de educação infantil. *Rev Saúde Pública* 2012; 46:657-64.
25. Zaballa E, Martínez JM, Duran X, Alberti C, Porras DGR, Benavides FG. Incidence of sickness absence by type of employment contract: one-year follow-up study in Spanish salaried workers. *Arch Public Health* 2016; 74:40.
26. Martins RH, Pereira ER, Hidalgo CB, Tavares EL. Voice disorders in teachers: a review. *J Voice* 2014; 28:716-24.
27. Medeiros AM, Assunção AA, Barreto SM. Voice problems and health care among teachers. *Rev CEFAC* 2012; 14:697-704.
28. Biserra MP, Giannini SPP, Paparelli R, Ferreira LP. Voice and work: a study of determinants of changes through teachers' discourse. *Saúde Soc* 2014; 23:966-78.
29. Ferreira LP, Bernardi APA. Distúrbio de voz relacionado ao trabalho: resgate histórico. *Distúrb Comun* 2011; 23:233-6.
30. Masson MLV, Ferrite S, Pereira LMA, Ferreira LP, Araujo TM. Em busca do reconhecimento do distúrbio de voz como doença relacionada ao trabalho: movimento histórico-político. *Ciênc Saúde Coletiva* 2017; set. <http://www.cienciaesaudecoletiva.com.br/artigos/em-busca-do-reconhecimento-do-disturbio-de-voz-como-doenca-relacionada-ao-trabalho-movimentohistoricopolitico/16357?id=16357sbfa.org.br>
31. Moy FM, Hoe VC, Hairi NN, Chu AH, Bulgiba A, Koh D. Determinants and effects of voice disorders among secondary school teachers in Peninsular Malaysia using a validated Malay version of VHI-10. *PLoS One* 2015; 10:e0141963.
32. Vieira MT, Claro RM, Assunção AA. Sample design and participation in the Educatel Study. *Cad Saúde Pública* 2019; 35 Suppl 1:e00167217.

Resumo

O objetivo foi investigar a prevalência e duração da ausência de professores ao trabalho por distúrbio vocal no Brasil e a associação com os fatores de trabalho e situação de saúde. Estudo transversal, com amostra representativa composta por 6.510 professores da Educação Básica, de ambos os sexos, realizado de outubro de 2015 a março de 2016. A variável dependente refere-se ao relato do professor quanto à ausência ao trabalho por problema de voz nos últimos 12 meses. As variáveis independentes tratam de questões da situação de trabalho e do sistema de saúde. Realizou-se análise descrita da prevalência e duração da ausência por problema vocal. A associação entre o evento de interesse e as demais variáveis foi baseada na razão de prevalência e intervalos de 95% de confiança, usando-se a regressão de Poisson. O principal motivo que afastou o professor da sala de aula foi o distúrbio de voz (17,7%), a duração da maioria dos afastamentos (78%) foi por um período curto (até sete dias). No modelo multivariado final, ajustado pela variável sexo, a maior prevalência de ausência por distúrbio vocal ocorreu entre os professores das regiões Norte e Nordeste, com maior duração de deslocamento para o trabalho, relato de diagnóstico de doença ocupacional e que procuraram pelo serviço de saúde, se ausentaram por problema emocional e problema respiratório no mesmo período de 12 meses. É elevada a prevalência de faltas ao trabalho por problema de voz por um curto período de tempo, que se mostrou associada à presença de outras comorbidades. Fatores macroestruturais indicam o caráter social do processo de adoecer e faltar ao trabalho dos docentes.

Absenteísmo; Distúrbios da Voz; Professores Escolares

Resumen

El objetivo fue investigar la prevalencia y duración de ausencias de profesores de su trabajo, causados por disturbios vocales en Brasil, y su asociación con factores de trabajo y situación de salud. Un estudio transversal, con muestra representativa, compuesta por 6.510 profesores de la Educación Básica, de ambos sexos, fue realizado de octubre de 2015 a marzo de 2016. La variable dependiente se refiere al relato del profesor, respecto a la ausencia del trabajo por problemas de voz durante los últimos 12 meses. Las variables independientes tratan sobre cuestiones de situación laboral y del sistema de salud. Se realizó un análisis descriptivo de la prevalencia y duración de la ausencia por problemas vocales. La asociación entre el evento de interés y las demás variables se basó en la razón de prevalencia e intervalos de un 95% de confianza, usando la regresión de Poisson. El principal motivo de baja de profesores fue el disturbio de voz (17,7%); la duración de la mayoría de las bajas (78%) fue por un período corto (hasta siete días). En el modelo multivariado final, ajustado por la variable sexo, la mayor prevalencia de ausencia por disturbio vocal se produjo entre los profesores de las regiones Norte y Nordeste, con mayor duración en el desplazamiento hacia el trabajo, relato de diagnóstico de enfermedad ocupacional; además de buscar un servicio de salud, ausentarse por un problema emocional y problema respiratorio durante el mismo período de 12 meses. Es elevada la prevalencia de ausencias en el trabajo por problemas de voz durante un corto período de tiempo, que se mostró asociada a la presencia de otras comorbidades. Factores macroestructurales indican el carácter social del proceso de enfermar y faltar al trabajo de los docentes.

Absentismo; Trastornos de la Voz; Maestros

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