The Prevalence of Teachers' Vocal Symptoms in Municipal Network of Education in Campo Grande, Mato Grosso do Sul, Brazil

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Summary: Objective. This study aims to provide an epidemiological overview of the teacher's voice and to examine the prevalence of voice problems at Municipal Board Education in Campo Grande, Mato Grosso do Sul, Brazil.
Methods. This is a cross-sectional, descriptive, and quantitative study. Of the 4957 teachers registered with Municipal Board Education (Semed)/2013, 394 participated in this research. All seven urban areas of Campo Grande (Prosa, Bandeira, Anhanduizinho, Lagoa, Segredo, Centro, and Imbirussu) were sampled. The Ferreira et al. protocol was adapted and used for data collection. The Likert scale was used as the measurement method.
Results. There was a high prevalence of vocal symptoms. Teachers had multiple symptoms related to the use of voice at work and acknowledged that the symptoms had adverse effects on their professional performance.
Conclusion. The severity of voice problems that the teachers experienced in daily speech therapy services and in the Municipal Network of Education was found in a significant number of participants in this research.
Key Words: Public health–Education–Voice–Faculty–Speech, language, and hearing sciences.

INTRODUCTION

The need to use the voice as a work tool has grown in the last decades. Estimates show that between 20% and 30% of the world's labor force is engaged in activities in which there is a significant demand for use of voice. Singers, actors, voice actors, teachers, and telephone operators are included in the list of voice professionals.[1,2]

Among the professionals who use voice as their main work tool, teachers are the most common research subjects, accounting for approximately 2 million workers of basic-level education in Brazil.[3]

The combination of prolonged voice use, environmental risk factors (physical, chemical, and ergonomic), and the stress at work organization contributes to the increasing prevalence of voice-related complaints that lead to work leaves, which generate financial and social costs for government and society.[4,5]

Symptoms of voice problems usually begin insidiously, becoming more frequent at the end of the working day and decreasing after a night's rest or on weekends. Over time, the symptoms become regular whether or not there is prolonged used of the voice, and there is no improvement even after vocal rest.[6–8]

Dysphonia associated with work may also be related to symptoms of mental distress as the teacher faces job expectations. Unfortunately, even though teachers are under vocal distress, they will keep on working. They may continue to work to meet the requirements of their jobs because of fear of unemployment and other unforeseen circumstances. This scenario often causes teachers' voice problems to become worse, requiring more complex therapeutic interventions. But it is important to mention the existence of laws providing for a teachers' vocal health program at both the state level (Mato Grosso do Sul) and the municipal level since 2007, which deal with this issue, however, in an incipient manner.

Hoarseness for a period is thought to arise from routine work. The view that hoarseness is a natural condition shows lack of understanding of how teachers' voices suffer and how voice problems can be reduced or even avoided if these professionals had access to preventive policies either at the public employment level or at the private employment level. Reality shows that there is much to be done as far as teachers' voice care is concerned. Studies with scientific grounding for the development of projects and programs to provide guidance and therapy to teachers when necessary are an example. To help teachers with their voice problems, many initiatives have been launched, such as The National Voice Campaign; however, for deeper and lasting improvements, it is necessary to move further. Do the teachers from the Municipal Network of Education in the city of Campo Grande really suffer with voice problems? Answers to this question are necessary in order to build solutions that ensure the public health of teachers.

The aim of this study was to outline the epidemiological scenario on teachers' voice in the Municipal Network Education of the city of Campo Grande (MS), verifying the prevalence of self-reported vocal symptoms in this population.

METHODS

This study was submitted to the Ethics Committee in Research of the Federal University of Mato Grosso do Sul for analysis and approved by opinion #320.349/2013. All the participants signed the Term of Free and Clarified Consent following Resolution MS/CNS/CNEP #466/14.

This is an epidemiological study (cross-sectional, descriptive, and quantitative) of vocal symptoms in teachers.

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Based on the inclusion criteria, teachers who had been working for at least 6 months on employment contracts under federal labor laws and with an official employment relationship qualified for the study. Professionals whose functions were other than teaching, and cases of work leave, license, and/or function relocation, were excluded from the study.

The research was conducted at schools belonging to the Municipal Network of Education encompassing elementary school teaching (1st through 9th year) in the 2013 school year. Ninety-four schools registered with the Education City Office—Semed/2013—are urban schools stratified into seven regions (Prosa, Bandeira, Anhanduizinho, Lagoa, Segredo, Centro, and Imbirussu) located in Campo Grande, state of Mato Grosso do Sul, Brazil. The stratification was necessary for all schools to be represented by their respective Pole-Regions. Polo-sample calculation used the Epi-Info, with an estimated population of 4957 teachers (CENSUS 2013/SEMED). The sample size was 400 teachers; the determined prevalence was 50%; and the significance level was at 5%. To compensate for possible losses or refusals, there was an addition of 10% (50 teachers).

For the schools to authorize the execution of the study, it was necessary to adapt the data collection to the teachers' schedules to avoid affecting the participants' work routine. For this reason, the measurement of the vocal symptoms by an otorhinolaryngological evaluation or voice recording for an auditory-perceptive analysis could not be made. Thus, the measurement of vocal symptoms was by self-report on a daily or weekly basis.

The inclusion criteria in the sample were grouping and selecting the teachers who had been working for at least 6 months on an employment contract and deemed effective in their work activity. As for their exclusion criteria, all the professionals whose function was different from teaching, and cases of work leave, license, and/or function relocation, were discarded.

The instrument of research was a questionnaire (adapted and self-administered), whose measurement unit refers to the Likert Scale model, based on the instrument elaborated by Ferreira et al. The same instrument has even been used as diagnosis and awareness element by a program developed by the São Paulo City Council.[9] It is noteworthy that it is easy to understand and fill in and may be used in whole or in parts, according to the researcher's interest in evaluating demographic, occupational, family, or environmental issues. In the present study, the section of the questionnaire on psychological and violence issues in school was excluded, and the section on general health issues, work environment, vocal behavior, and lifestyle was the focus.

First, a pretest was carried out, which was made up of the following:

(1) use of the questionnaire through an interview with 10 individuals from the Master's Degree in Health and Development in the Center-West Region of UFMS (Federal University of Mato Grosso do Sul), to evaluate the adequacy of terms and understanding of the instrument;
(2) a revision of questions that the respondents misunderstood;
(3) application of the revised questionnaire in a self-administered format. It was noticed that most of the surveyed individuals during the pretest had clarity and assertiveness concerning the answers, except those for the open-ended questions. The mean time for the task of filling in the questionnaire was 25 minutes with the researcher assisting the subjects with possible questions. The respondents found the questionnaire easy to fill in because there were more closed-ended questions, the language was understandable, and the questions were divided into topics. Difficulties encountered in the instrument were as follows: it was very long; it had five choices of answers per item; and it had some semi-open-ended questions.

The following variables were analyzed: (1) teachers' demographic profiles: sex, age, marital status, education, and functional situation; (2) the relationship between the symptoms vocal group and health problems: digestive, hormonal, spine, dental, circulatory, emotional, respiratory, and auditory; (3) the relationship between vocal symptoms and living habits (daily water consumption, smoking, alcohol consumption, sleeping, leisure activities); (4) the relationship between vocal symptoms and vocal aspects (feeling of discomfort while speaking, voice nuances throughout the day, listeners' reaction); (5) the relationship between vocal symptoms and work (absenteeism, vocal satisfaction, vocal care guidance).

The characteristics of the sample are described in tables and figures. To compare categorical variables, the chi-square test was used, and to analyze continuous variables and variables with normal distribution, Student's t test was used. Values $P < 0.05$ were considered significant. Odds ratio was used to verify independent associations.

RESULTS

In terms of demographic profile, Table 1 shows that the teachers are predominantly female, aged 39 years on average, university graduates, married, having a career time of between 10 and 20 years, vocally asymptomatic, and satisfied with their voice.

Figures 1 and 2 show the most often cited symptoms and sensations among teachers in general.

Table 3 shows deleterious vocal habits self-referred by symptomatic vocal teachers.

Table 4 shows healthy-living habits self-referred by the teachers.

Table 5 shows what the teachers claimed to be predictors of their vocal problem.

DISCUSSION

Population profile

According to Table 1, the composition of the teachers' group in this study is similar to those in previously published research papers in this area: mostly females, exclusively dedicated to teaching and having working hours longer than 20 hours per week.[10,11]

Considering the average working years of between 10 and 20, it can be stated that there is no relationship concerning the vocal