

Voice Disorders in Teachers. A Review

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Summary: Introduction. Voice disorders are very prevalent among teachers and consequences are serious. Although the literature is extensive, there are differences in the concepts and methodology related to voice problems; most studies are restricted to analyzing the responses of teachers to questionnaires and only a few studies include vocal assessments and videolaryngoscopic examinations to obtain a definitive diagnosis.

Objective. To review demographic studies related to vocal disorders in teachers to analyze the diverse methodologies, the prevalence rates pointed out by the authors, the main risk factors, the most prevalent laryngeal lesions, and the repercussions of dysphonias on professional activities.

Materials and Methods. The available literature (from 1997 to 2013) was narratively reviewed based on Medline, PubMed, Lilacs, SciELO, and Cochrane library databases. Excluded were articles that specifically analyzed treatment modalities and those that did not make their abstracts available in those databases. The keywords included were teacher, dysphonia, voice disorders, professional voice.

Key Words: Voice disorders–Teacher–Dysphonia–Professional voice.

CLINICAL AND EPIDEMIOLOGICAL ASPECTS OF DYSPHONIAS IN TEACHERS

Estimates of the prevalence of voice disorders among the general population are 6–15%. However, when teachers are considered, these values increase to 20–50%, reaching up to 80%^{1–4} (Table 1). Such high prevalence of dysphonia for this professional population is reflected in the large literature base and number of sessions at voice conferences.

In Brazil, in 2004, Simões⁵ conducted the study “*Referências bibliográficas nacionais sobre voz dos profissionais da voz*” (National bibliographic references on the voice of voice professionals), which identified 283 studies on this subject dated from 1987 to 2004; most of these studies were published in meeting annals, whereas only 11% were published in journals. That same author then included 2004 and 2005 and found more than 80 publications. By including 2005, 2006, and 2007 to update those data, Dragone et al⁶ found an increase of over 207 publications, which corresponded to around 60–80 publications per year. Considering that voice disorders among teachers have been common and discussed worldwide, the extensive number of publications on this subject is understandable.

Mattiske et al² conducted a review of the major publications on voice problems affecting teachers and found that most authors apply questionnaires as methodology, whereas only a few include endoscopic tests to elucidate the laryngeal diagnosis. In addition, several publications have evidenced around 50% prevalence of dysphonia among teachers,^{7–9} and vocal

fatigue, throat discomfort, roughness, and dysphonia have been the major symptoms.

Voice problems affecting teachers were not always transitory and several cases demanded vocal rehabilitation and even drug and/or surgical treatment. Munier and Kinsella⁸ analyzed 304 questionnaires filled in by teachers and found similar symptoms like vocal fatigue (18%), parched throat (19%), and singing difficulties (20%). In this study, teachers were asked to quantify the consequences of voice problems for their professional development; results indicated that compromising of activities due to voice problems was severe for 12%, moderate for 34%, and slight for 48%.

Roy et al⁴ presented a questionnaire to 2401 participants from Iowa and Utah (1243 teachers and 1279 workers of different areas) to compare the incidence of voice disorder between teachers and the general population. Voice symptoms were found more frequently in teachers than the general population (93.7% vs 88.7%), especially hoarseness, discomfort and effort to speak, and singing difficulty. The possible correlation between teacher’s voice symptoms and the professional activities they participated in was reported by 60.2% of teachers and only 20.5% of the general population. Investigation into the consequences of voice disorders on the professional dynamics indicated that 43% of teachers needed to reduce their didactic activities at least once in the previous year, whereas 18% were absent from work at least 1 day due to a voice problem (compared with 7.2% of the general population).

In a similar study, De Jong et al⁹ analyzed questionnaires distributed to a population composed of 1877 teachers and 239 controls. Results indicated that 67.4% teachers and 43.6% controls complained of voice problems in the previous year, whereas 27.3% teachers and only 1.9% of controls were absent from their professional activities due to voice problems. Van Houtte et al¹⁰ obtained lower proportions after analyzing questionnaires responded to by 994 teachers and 290 workers of different areas without vocal abuse. Voice disorders were reported by 51.2% teachers and 27.4% controls. Absence from work at least once a week, due to a voice problem, was reported by 20.6% teachers.

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TABLE 1.
Major Publications on the Prevalence/Epidemiology of Voice Problems in Teachers

Author and Journal	Objective	Methodology	Results	Conclusions
Smith et al J Voice, 1997	To compare the frequency and the effects of voice symptoms between teachers and a group with different occupations.	Questionnaires	Teachers were more likely to report having a voice problem (15% vs 6%), having specific voice symptoms, and having symptoms of physical discomfort.	Teaching is a high-risk occupation for voice disorders and this health problem may have significant work-related and economic effects.
Mattiske et al JVoice, 1998	To review the prevalence, the causes, the prevention, and the treatment of voice problems among teachers.	Review	42 Manuscripts were reviewed. The criteria for determining the presence of voice problem creates further difficulties in reaching conclusions about the prevalence of voice disorders among teachers.	The actual prevalence of voice problems in teachers is unclear. Preventive programs are needed.
Simberg et al J Voice, 2000	To study the prevalence of voice disorders among teacher students.	Interview/questionnaires Perceptual vocal analysis Laryngoscopic examination	226 Students were surveyed. 20% Reported two or more voice symptoms during the previous year and 19% had an organic voice disorder.	Clinical evaluation of students with voice symptoms and more vocal training in the teacher education programs are needed.
Roy et al J Voice, 2004	To study the prevalence of voice disorders in teachers and the general population.	Questionnaires	1243 Teachers and 1288 nonteachers were surveyed. The prevalence of current voice problems was greater in teachers compared with nonteachers (11.0% vs 6.2%). The prevalence of voice disorders during their lifetime was 57.7% for teachers and 28.8% for nonteachers.	Teaching is a high-risk occupation for voice disorders
De Jong et al Folia Phoniatr Logop, 2006	To study the epidemiology of voice problems in Dutch teachers.	Questionnaires	1878 Teachers and 239 controls were surveyed. More than half of the teachers reported voice problems.	Teaching is a high-risk profession for the development of voice problems.
Munier and Kinsella Occup Med (Lond), 2008	To study the prevalence and the impact of voice problems in primary school teachers.	Questionnaires	550 Teachers were surveyed. 27% Of teachers suffered from a voice problem, 53% had an intermittent' voice problem, whereas only 20% had no voice problem.	Voice disorders were very common in our study of primary school teachers.

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