



Brazilian Journal of  
OTORHINOLARYNGOLOGY

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REVIEW ARTICLE

## Factors associated with voice disorders among the elderly: a systematic review<sup>☆</sup>

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Received 2 October 2017; accepted 24 November 2017

### KEYWORDS

Voice disorders;  
Epidemiology;  
Cross-sectional  
studies;  
Aged

### Abstract

**Introduction:** During the aging process, natural modifications occur in the larynx and the structures involved in phonation which explain the specific characteristics found in the voices of elderly persons. When, at any moment, a voice fails and there is interference with communication, a voice disorder has occurred. This can generate disadvantages in communicative efficiency and have a negative impact on quality of life, compromising mechanisms of socialization, the maintenance of autonomy, and the sense of well-being. Nevertheless, there appears to be little clarity about which factors are associated with voice disorders in this population, especially from an epidemiological perspective.

**Objective:** The present study is a literature review to identify factors associated with voice disorders among the elderly described in population-based studies.

**Methods:** A systematic review of electronic databases was carried out. The methodological quality of the studies was analyzed with the Strengthening the Reporting of Observational Studies in Epidemiology guidelines. The research was conducted independently by two researchers.

**Results:** Although two articles met the eligibility criteria, none fulfilled all the criteria for the evaluation of methodological quality. According to the two studies selected for this review, factors associated with voice disorders among the elderly included both physical and psychosocial aspects. However, the methodological discrepancies between the studies, particularly in relation to sample selection and the instruments used indicate great variability and compromise the reliability of the results.

<sup>☆</sup> Please cite this article as: Gois AC, Pernambuco LA, Lima KC. Factors associated with voice disorders among the elderly: a systematic review. Braz J Otorhinolaryngol. 2017. <https://doi.org/10.1016/j.bjorl.2017.11.002>

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Peer Review under the responsibility of Associação Brasileira de Otorrinolaringologia e Cirurgia Cérvico-Facial.

<https://doi.org/10.1016/j.bjorl.2017.11.002>

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**PALAVRAS-CHAVE**

Distúrbios de voz;  
Epidemiologia;  
Estudos transversais;  
Idoso

*Conclusion:* Further prevalence studies and investigations of factors associated with voice disorders in the elderly from an epidemiological perspective, and which involve different cultures, should be carried out.

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**Fatores associados a alterações vocais em idosos: uma revisão sistemática****Resumo**

*Introdução:* Durante o processo de envelhecimento, modificações naturais ocorrem na laringe e nas estruturas envolvidas na fonação que explicam as características específicas encontradas nas vozes de pessoas idosas. Quando, a qualquer momento, a voz falha e há interferência com a comunicação, ocorre um distúrbio de voz. Isso pode gerar desvantagens na eficiência de comunicação e um impacto negativo sobre a qualidade de vida, comprometendo os mecanismos de socialização, a manutenção da autonomia e o sentido de bem-estar. Entretanto, ainda não estão claros quais os fatores associados aos distúrbios de voz nesta população, especialmente considerando-se uma perspectiva epidemiológica.

*Objetivo:* O presente estudo é uma revisão da literatura para identificar fatores associados a distúrbios de voz em idosos descritos em estudos de base populacional.

*Método:* Foi realizada uma revisão sistemática das bases de dados eletrônicas. A qualidade metodológica dos estudos foi analisada utilizando-se as diretrizes *Strengthening the Reporting of Observational Studies in Epidemiology*. A pesquisa foi realizada de forma independente por dois pesquisadores.

*Resultados:* Embora dois artigos tenham preenchido os critérios de elegibilidade, nenhum deles preencheu todos os critérios para a avaliação da qualidade metodológica. De acordo com os dois estudos selecionados para esta revisão, os fatores associados aos distúrbios de voz em idosos incluíram aspectos físicos e psicossociais. Entretanto, as discrepâncias metodológicas entre os estudos, particularmente em relação à seleção da amostra e aos instrumentos utilizados, indicam grande variabilidade e comprometem a confiabilidade dos resultados.

*Conclusão:* Devem ser realizados estudos de prevalência e investigações de fatores associados a distúrbios de voz em idosos a partir de uma perspectiva epidemiológica e que levem em consideração diferentes culturas.

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**Introduction**

The aging process is determined by factors that are present from birth and develop throughout life according to individual variations.<sup>1</sup> During this process, there are natural changes in the larynx and structures involved in phonation that can explain the specific characteristics found in the voices of elderly persons,<sup>2</sup> such as hoarseness, breathiness, aphonia, vocal fatigue, effort required to improve vocal projection, a reduction in vocal extension, a tremulous voice, difficulty in controlling vocal intensity, pain in the region of the shoulder girdle, and a sensation of burning, odor or a foreign body in the larynx.<sup>3</sup>

When, at any moment, the voice fails or is perceived by the individual to be different than normal, interfering with communication, a voice disorder (VD) has occurred.<sup>4</sup> The prevalence of VDs among the elderly is estimated to range from 4.8% to 29.1%<sup>5</sup> and has a great biological and psychosocial impact,<sup>6</sup> which can lead to disadvantages in

communicative efficiency and have a negative impact on quality of life, compromising mechanisms of socialization, the maintenance of autonomy and the sense of well-being.<sup>7</sup> In this sense, it is important that caring for the voice of the elderly is based on preventive behaviors and the subsequent increase of vocal efficiency.<sup>8</sup> To achieve this, it is important to know what factors are associated with VDs among the elderly.

The literature describes how the voices of elderly persons can be affected by the physical, psychic and life history of individuals, as well as bad habits and constitutional, racial, hereditary, alimentary, social and environmental factors.<sup>9</sup> Despite this, there seems to be little clarity about what factors are associated with VDs in this population, especially from an epidemiological perspective, which can guarantee the representativeness of a given population. Considering this vacuum, the objective of this systematic review of literature was to identify factors associated with VDs in the elderly as described in population-based studies.

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