

THE ROLE OF THE AUDIOLOGIST FACING LANGUAGE CHANGES OF HEARING, BALANCE, SPEECH AND SWALLOWING: A LITERATURE REVIEW

O papel do fonoaudiólogo frente a alterações fonoaudiológicas de audição, equilíbrio, voz e deglutição: uma revisão de literatura

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ABSTRACT

This study aims to present the main speech pathology found in the elderly, in addition to discussing the role of the audiologist face of this change. This is a review bibliographical study. O bibliographic research was conducted in the access of the Virtual Health Library network Inclusion criteria for articles were: studies in their entirety, in Portuguese, in the period 2007-2012 and which embraced the research theme. Were selecionados 10 studies for meeting the inclusion criteria proposed, constituting the sample for this was observed that as the objective of these publications, the authors sought to study, mostly describing the related voice changes or presbyphonia; difficulties in functions chewing, in equilibrium, with the presence of falls, changes in hearing acuity, auditory processing, tinnitus and epidemiological, socioeconomic and etymological senile changes and / or healthy. Concluded that is aging with aging, there are several speech pathology found in humans which makes it important and necessary role of the speech therapist in the health care of the elderly.

KEYWORDS: Aged; Speech, Language and Hearing Sciences; Communication; Postural Balance

■ INTRODUCTION

The twenty first century has been marked by significant changes in socioeconomic conditions and health of the world population and, consequently, in its demographic structure. The population is undergoing a process of transition and this situation brings consequences both for society and for the health system, particularly in developing countries, which often are not prepared to attend facing this aging¹. Aging is a progressive and a dynamic process, in

which there are modifications in various aspects. This process is determined by several factors that are present from birth and will develop throughout life, and has a large intra-individual and inter-individual variation².

There are many changes that occur in communication and in swallowing with the human aging process, demonstrating the importance of speech therapy in elderly health. With advancing age, many physiological changes occur in the swallowing process in the elderly, leading to the occurrence of dysphagia³.

Due to aging, the act of swallowing undergoes some changes inherent to aging, called presbyphagia, which is characterized by physiological changes that occur by the degeneration of the swallowing mechanism, due to healthy aging of nerve and muscle fibers. The healthy elderly retain their functionality, offsetting such losses, gradually adjusting to them⁴.

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With senile or senescent aging, various changes may occur in the speech organs, such as: reducing the tone of the language coupled with sagging muscles, difficult in chewing food more solid or consistent, taking the elderly to prefer soft foods moist and consequently swallowing easier, resulting in manifestations of dysphagia resulting from reduced muscle tone and a certain clumsiness own of the aging process³.

In addition to these changes, observed with aging, changes in hearing acuity and auditory processing. The presbycusis is the term used for the result of the natural aging of the human ear, ie a hearing disorder associated with degeneration of the cochlea, which mainly affects its basal part, impairing hearing in the course of the high frequency age⁵.

Among the disease processes in the elderly, may be cited as clinically significant tinnitus, which although being not a disease but a symptom, may reflect in the operation of the individual organism as a whole and is quite prevalent in this age group⁶.

Over the years, the human voice is also of new features. The vocal deterioration of an elderly is quite typical and has a large impact, often reinforcing stereotypes of elderly⁷. Presbyphonia is the voice changing due to natural aging, which may or may not be associated with presbylarynx. It is the natural aging of the voice, with beginning and development depending on the physical, mental health and life history of the individual and constitutional, racial, genetic, dietary, social and environmental factors⁸. Dealing with aging and its nuances is one of the great challenges of this century. For health care, this translates into growing and complex demands, requiring professionals as well as expertise in geriatrics and gerontology, interdisciplinary care that addresses the health needs of the elderly⁹.

Given the above, note the relevance of studies on aging in the context of speech attention to elderly health, justifying this study, showing the importance

of the role of speech therapist with the elderly so that they can enter in practice of health services the data reported here. The objective of this study was to investigating and analyzing studies that, according to the criteria of inclusion and exclusion, cited or described the speech pathology found in the elderly, as well as addressed the role of the audiologist in these situations.

■ METHODS

It is a literature review, which is a research method that allows the search, critical evaluation and the synthesis of available evidence of the subject studied, with as the final product the current state of knowledge investigated and identifying gaps that lead to the development of future research.

The articles were selected from the following electronic databases: Scientific Electronic Library Online (SciELO), Latin American and Caribbean Literature on Health Sciences (LILACS), Medical Literature Analysis and Retrieval System Online using (MedLine) as descriptors: speech therapy, elderly, aging, voice, dysphagia, language, hearing and swallowing. To search for articles, the descriptors were used separately and combined.

The inclusion criteria for articles were: studies in their entirety, in Portuguese, in the period 2007-2012 and which embraced the research theme. We excluded articles found on more than one source of information or duplicate and those not related to the topic.

In the initial survey 213 publications were found in the databases SCIELO, LILACS and Medline. Of these, 203 were excluded and 10 were selected, because they meet the inclusion criteria proposed, constituting the sample for this study (Table 1).

Table 1 – Distribution of found and selected articles

BASES	Publications found	Publications excluded	Publications selected
	n =	n =	n =
SCIELO	67	61	6
LILACS	17	15	2
MedLine	129	127	2
Total	213	203	10

■ LITERATURE REVIEW

All 10 selected publications met the inclusion criteria and are distributed as follows: 6 based on Scielo; 2 in LILACS and 2 in MedLine.

Figure 1 presents selected articles, according to title, journal, authors, year of publication, study characteristics and main outcomes of the research in the period 2007-2012. In 2012 there was the highest number of publications (3), followed by two publications each year in 2011, 2009 and 2007, and a publication only in 2010.

The journals with the highest number of publications were the Brazilian Journal of Otorhinolaryngology (2) and CEFAC Magazine (2). The Brazilian region with the largest publication was the Southeast, with 7 posts.

Regarding the objective of these publications, the authors searched for, mostly, describing the changes related to voice or presbyphonia; difficulties in mastication; in equilibrium with the presence of falls; changes in hearing acuity and auditory processing; tinnitus and epidemiological, socioeconomic and etymological senile changes and / or healthy aging.

The kinds of studies publications refer to Original Article (7) and Research (3). As the approach it met: descriptive studies with qualitative approach (1), quantitative descriptive study (6), experimental (1) and review study (2).

Regarding the outcomes of the publications, it appears that the authors described different points on speech-language disorders that can appear with the senescent aging, such as hearing difficulties as presbycusis and tinnitus; on balance there was a greater risk of falls and presbyvertigo; swallowing in the elderly can be presbiphagia and are very common, changes in voice, and called presbyphonia or are unrelated to aging of the larynx, the presbylarynx. Mentioned that aging triggers changes in the body and these are responsible for most types of clinical changes may or may not cause functional impact on the lives of the elderly. Such changes are expected in healthy aging however, can be mitigated after speech therapy^{2-7,10-12}.

The majority of authors have reported speech pathology related to aging as deficits in communication, swallowing, balance, and are presented for each study as age-related senescent^{2,4,5,7,10,11}. Only one study showed a change in communication, dysphonia, relative to pathological or senile aging³.

The studies emphasize the losses and dissatisfactions that auditory and vestibular or balance changes can bring to the life of the elderly. It was observed changes in the prevalence of hearing

acuity of the sensory type, compromising the auditory reception of the communication of the elderly⁵. Tinnitus is an intense dissatisfaction factor in elderly patients by undermining their daily activities and provides sleep and emotional disorders⁶. Elderly presenting presbyvertigo or the laughter of falls may have to live with the symptoms of vertigo and/or the consequences of fracture, and if dropped, can lead to several comorbidities, in case of hospitalization. These studies demonstrate the importance of evaluating the risk of falls in the elderly, so that preventive measures are taken. It must make up the hearing evaluation for early hearing rehabilitation with the goal of maximizing the quality of life^{5,11}.

According to literature analysis, changes in the articulators and oromiofacial and neck muscles provide changes in oral functions such as mastication and swallowing. The presbiphagia, if not accompanied by a speech pathologist in a multidisciplinary team, can be harmful and damaging to the elderly, may bring harm, such as dehydration, malnutrition, aspiration pneumonia and even death⁴.

The results of the studies showed that the elderly presents changes in the vocal characteristics with aging⁷, but may also be related to diseases such as parkinsonism³. A study demonstrated the effectiveness of an exercise that produced a positive immediate effect voice quality in elderly and after its execution, the vocal utterance of the elderly was better than the one presented by him in usual situation⁸.

It is noteworthy that there was a predominance of studies on voice, swallowing and hearing/balance, evidencing, thus, the need for publications in other areas of speech therapy.

It was also found that most of the articles relates to the evaluation of speech pathology. Additionally, no study on prevention or intervention was located. This fact is a lack of research in this area that should be considered to guide future studies.

■ FINAL CONSIDERATIONS

It is hoped that this literature review can provide basic knowledge on the speech pathology in the elderly population. However, one should seek more knowledge in relation to this subject.

We know the importance of the role of health professionals to providing a healthy and active aging in the elderly population, including the role of the speech therapist, occupational healthcare capable of dealing with communication, swallowing and balance.

Nº	Title of the articles	Journal/Year of publication	Author	Study aim	Study characteristics	Synthesis of Conclusions/ Recommendations
1	Disfagia do idoso: estudo videofluoroscópico de idosos com e sem doença de Parkinson.	Revista Distúrbios da Comunicação São Paulo 2007	BIGAL, A. <i>et al.</i>	Describe changes in oral pharyngeal and esophageal phases of swallowing in patients with Parkinson's disease, evaluated by means of fluoroscopy, and compares them with complaints reported by themselves.	Location: City of São Paulo. Type: Original Article. Exploratory and descriptive study with a qualitative approach.	Patients with Parkinson's disease may have changes in oral and pharyngeal stages of swallowing and esophageal specifically, in the oral procedure, which are amendments relating to Parkinson's disease.
2	Envelhecimento vocal em idosos institucionalizados.	Revista CEFAC São Paulo 2007	MENEZES, L. N. M. e VICENTE, L. C. C.	Assess hearing vocal characteristics-perceptive of institutionalized elderly, identify whether these characteristics interfere with the communication process and correlate them with the assessment of the structures of the Stomatognathic system and speech pattern.	Location: Belo Horizonte. Type: cross-sectional clinical study. Descriptive of a quantitative approach	There are changes in the parameters regarding voice arising from age, being that they do not interfere with communication and maintain diverse relationship with other changes in the structures of the Stomatognathic system.
3	Saúde e envelhecimento: um estudo de dissertações de mestrado brasileiras (2000-2009).	Revista Ciência & Saúde Coletiva 2012	HEIN, M. A. e ARAGAKI, S. S	Understand the discursive practices and directions that have been produced regarding the relationship between health and aging today.	Location: Tocantins. Type: literature review.	Many problems faced by the elderly can be related in how they recognize and are recognized by others. Thus, it is fundamental the affirmation and share the positive aspects related to the elderly and the ageing process, providing the care and protection of the family and society to this social group. The audiologist may contribute to the confrontation of these changes so they don't have any negative impact.

Nº	Title of the articles	Journal/Year of publication	Author	Study aim	Study characteristics	Synthesis of Conclusions/ Recommendations
5	Avaliação do risco de quedas em idosos atendidos em Unidade Básica de Saúde.	Revista da Escola de Enfermagem da USP São Paulo 2012	PINHO, T. A. M. <i>et al.</i>	Evaluate the risk of falls in the elderly in a family health unit.	Venue: São Paulo. Type: cross-sectional epidemiological study with quantitative approach.	The elderly evaluated 58.8% suffered falls and the elderly who have fallen (63 elderly), 71.4% suffered from 1 to 2 drops, citing as primary cause dizziness/vertigo, intrinsic and extrinsic was slippery floors or wet. It is concluded that is relevant to evaluate the risk of falls in the elderly, so that if preventive measures are taken, with the goal of maximizing the quality of life.
6	Presbifagia: Deglutição no processo do envelhecimento.	Editora PUCRS 2009	CARDOSO, M. C. A. F.; ORIGUCHI, Y. e SCHNEIDER, R.	Describe the changes found in swallowing in the aging process.	Location: Rio Grande do Sul. Type: literature review.	Many elderly fail to make the necessary adjustments, and may suffer from dysphagia, which alters your nutritional status. Knowing the possible modifications of swallowing can assist in the establishment of language and actions in promoting health in aging of the population, which is increasing worldwide.
7	Caracterização do zumbido em idosos e de possíveis transtornos relacionados.	Revista Brasileira de Otorrinolaringologia São Paulo 2009	FERREIRA, L. M. B. M.; RAMOS J. e ALBERTO, N.; MENDES, E	Evaluate and qualify the buzz in a group of elderly.	Venue: São Paulo. Type: study of transverse type, descriptive, quantitative in nature.	Tinnitus interferes in the lives of the elderly. There is no correlation between the degree of hearing loss and the degree of patient dissatisfaction with the tinnitus; and presbycusis was the most common finding found in audiometries. Tinnitus is a factor of intense dissatisfaction in the elderly patients, for it undermines their daily activities and provides sleep and emotional changes.
8	Perfil dos limiares audiométricos e curvas timpanométricas de idosos.	Revista Brasileira de Otorrinolaringologia São Paulo 2010	GUERRA, T. M. <i>et al.</i>	Profile: indicate the audiologic of elderly in a clinical School of the city of Belo Horizonte.	Venue: São Paulo. Type: descriptive, quantitative Study. Retrospective review of medical records.	It was noted a higher prevalence of hearing loss, sensorineural type and degree of loss ranged from mild to profound, with higher prevalence of moderate degree.

Nº	Title of the articles	Journal/Year of publication	Author	Study aim	Study characteristics	Synthesis of Conclusions/ Recommendations
9	Correlação entre o envelhecimento e as dimensões das pregas vocais.	Revista CEFAC 2011	MIRANDA, S. V. V.; MELLO, ROBERTO, J. V. e SILVA, H. J	Observe the immediate effect of the realisation of the exercise of breath sound with the vocal tract semi-occluded in the voice of elderly individuals.	Venue: São Paulo. Type: Cross, quantitative	The office of the vocal tract semi-occluded produced immediate positive effect on vocal quality of the elderly, observed only in hearing-perceptive assessment. After the execution of the exercise, the vocal emission of the elderly was better than by him in usual situation, although this effect is not self-perceived.
10	Efeito imediato do exercício de sopro sonorizado na voz do idoso.	Jornal da Sociedade Brasileira de Fonoaudiologia 2011	SIRACUSA, M. G. <i>P.et al.</i>	Evaluate the dimensions of the vocal folds in both sexes and correlate them with aging.	Location: Pernambuco. Type: experimental study.	The dimensions of length, width and thickness of the vocal folds were greater in males. However, there was no statistically significant difference between the three dimensions of the vocal folds during aging in both sexes.

Figure 1 - Distribution of selected articles, according to title, periodical, authors, year of publication, study characteristics and main research outcomes (2007-2012).

RESUMO

Este estudo objetiva apresentar as principais alterações fonoaudiológicas encontradas no idoso, além de discutir qual o papel do fonoaudiólogo frente a essas alterações. Trata-se de um estudo de revisão bibliográfica. O levantamento bibliográfico foi realizado na rede de acesso da Biblioteca Virtual em Saúde. Os critérios de inclusão dos artigos foram: estudos na íntegra, no idioma português, no período 2007 a 2012 e que contemplasse o tema da pesquisa. Foram selecionados 10 estudos por atenderem aos critérios de inclusão propostos, constituindo-se na amostra deste estudo. Observou-se que quanto ao objetivo das publicações, os autores buscaram, em sua maioria, descrever as alterações relacionadas à voz ou a presbifonia; as dificuldades nas funções de mastigação; no equilíbrio, com presença de quedas; alterações na acuidade auditiva, no processamento auditivo, zumbido e as mudanças epidemiológicas, socioeconômicas e etimológicas do envelhecimento senil e/ou saudável. Concluiu-se que com o envelhecimento, várias são as alterações fonoaudiológicas encontradas no ser humano o que torna importante e necessária a atuação do fonoaudiólogo na atenção a saúde da pessoa idosa.

DESCRITORES: Idoso; Fonoaudiologia; Comunicação; Equilíbrio Postural

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