

Chrut Aneta, Pierzak Monika, Gorzelak Martyn, Kasperczuk-Bajda Agnieszka. Language and communication disorders associated with physiological aging. *Journal of Education, Health and Sport*. 2018;8(9):166-175. eISSN 2391-8306. DOI <http://dx.doi.org/10.5281/zenodo.1345239>
<http://ojs.ukw.edu.pl/index.php/johs/article/view/5809>
<https://pbn.nauka.gov.pl/sedno-webapp/works/873712>

The journal has had 7 points in Ministry of Science and Higher Education parametric evaluation. Part b item 1223 (26/01/2017).
1223 Journal of Education, Health and Sport eissn 2391-8306 7

© The Authors 2018;

This article is published with open access at Licensee Open Journal Systems of Kazimierz Wielki University in Bydgoszcz, Poland
Open Access. This article is distributed under the terms of the Creative Commons Attribution Noncommercial License which permits any noncommercial use, distribution, and reproduction in any medium, provided the original author(s) and source are credited. This is an open access article licensed under the terms of the Creative Commons Attribution Non commercial license Share alike. (<http://creativecommons.org/licenses/by-nc-sa/4.0/>) which permits unrestricted, non commercial use, distribution and reproduction in any medium, provided the work is properly cited.

The authors declare that there is no conflict of interests regarding the publication of this paper.

Received: 28.07.2018. Revised: 28.07.2018. Accepted: 14.08.2018.

Language and communication disorders associated with physiological aging

Aneta Chrut¹, Monika Pierzak¹, Martyn Gorzelak¹, Agnieszka Kasperczuk-Bajda²

¹Jan Kochanowski University, Faculty of Medicine and Health Sciences

²Medical University of Lublin, Faculty of Health Sciences

Address for correspondence:

Aneta Chrut

Jan Kochanowski University, Faculty of Medicine and Health Sciences

e-mail: aneta.chrut@gmail.com

<http://orcid.org/0000-0001-8473-7242>

Monika Pierzak

Jan Kochanowski University, Faculty of Medicine and Health Sciences

e-mail: monikapierzak03@o2.pl

<http://orcid.org/0000-0002-4367-4465>

Martyna Gorzelak

Doctoral studies at the Faculty of Health Sciences,

Jan Kochanowski University

e-mail: martynawychowaniec@o2.pl

<http://orcid.org/0000-0003-0532-1690>

Agnieszka Kasperczuk-Bajda

Doctoral studies at the Faculty of Health Sciences,

Medical University of Lublin

e-mail: agnieszka.kasperczuk@wp.pl

<http://orcid.org/0000-0002-6780-958X>

Abstract

Introduction: In the process of physiological aging leads to changes related to human functioning. Modifications also apply to the sphere of cognitive and related competencies: language and communication. Ability to efficiently use speech and language at the age of seniority is important not only because of intellectual functioning, but also serves as pragmatic. Language is in fact an essential tool for building social relationships.

The aim of the study was to analysis of the literature on changes in language and communicative competence in the process of physiological aging.

Results: With age, the deterioration observed in language and communication skills of older people. In the area of language skills is observed senile changes at all levels of posts: phonological, syntactic and semantic. The elderly are observable phenomenon, which does not notice the earlier stages of life. In the statements of senior citizens should pay particular attention to phenomena such as TOT (tip-of-the-tongue) and OTV (off-target verbosity).

Summary: The speech of seniors is a reflection of changes occurring within the cognitive functions of both the basic and the higher ones. Research on the use of language by seniors are an interesting topic for an interdisciplinary group of specialists. In order to delay the aging process in the field of cognitive and linguistic advised to inspire the elderly to educational activity, providing them thus improving the quality of life.

Keywords

aging, senility, off-target verbosity phenomenon, tip-of-the-tongue phenomenon

Introduction

Speech is accompanied by a man from the earliest moments of life, and lasts until the end. A child growing up acquires speech of people surrounding them. He hears people communicate, learn to use the language and thus realizes that speech is the most economical way to meet their needs. Speech is also a basic element in shaping their own personal identity, cultural and ethnic [1].

Contemporary definitions of linguistic and speech therapy, speech perceive as "actions that performs with the participation of language learning the reality of man and giving her interpretation of the other participants of social life" [2]. By the term S. Grabias „ speech” is synonymous with the term „ linguistic behavior”. They divide them into:

- behavior taking place in the so-called speech internal (cerebration);
- behavior occurring in speech external, which term is used term communication language or language interaction. These behaviors result in the creation of the text in the form of organized sound, enabling human communication in a social group.

Language in such a system of concepts allow [3]:

1. the human way to gain knowledge and to organize it.
2. build message.
3. organize social life.

Specific language skills are associated with aging. This period affects the functioning of the human in the intellectual sphere and interferes with language skills. This is particularly important due to the pragmatic aspect. Language is a tool for communication in society, thus providing the basis for building social realities [4].

The goal of the work was to analyse the literature on changes in language and communicative competence in the process of physiological aging.

Communication in the process of physiological aging

The aging population in developed countries has contributed to increased interest in the functioning of the senior researchers. Also in the field of speech therapy it emerged a new discipline which is the senior speech therapy (gerontologopedy). She sees the needs of an aging population, in particular, changes in language communication in this group of society. The senior speech therapy is not only typical of the senior group, changes in the perception of efficiency and execution, but also draws attention to the language and communication requirements delineated their carer [5].

Considering the changes in the language and communication must be distinguished senior management strategies speech therapy in:

- the physiological aging process, when a loss in efficiency occurs with age, gradually and naturally;
- secondary aging process, which caused difficulties for the operation are not only age, but also diseases and injuries, etc.

Secondary aging process is studied mainly by neurologopedy where linguistic changes taking place mainly as a result of various pathologies: neurodegenerative diseases, ie. Dementia and aphasia [6]. Development of medicine and tools for the diagnosis contributed to the widening of research in disciplines such as neuropsychology, neurolinguistics or neurologopedy. This is reflected in the amount of work on the co-occurrence of speech and language disorders in neurodegenerative diseases (Alzheimer's disease, frontotemporal dementia, Parkinson's disease) [7,8]. Unlike the present study the process of speech development in physiological aging. Their number is still small, and the description of linguistic phenomena narrow [1,9,10].

A definite pioneer in the study of speech in people senior aged on Polish soil is W. Tłokiński. In his first monograph devoted to this phenomenon, he states that in the scientific literature devoted to aging for many years it was believed "that everything man can change with age, with the exception of speech" [11]. Also I. Stuart-Hamilton and Leah L. Light and Deborah M. Burke exhibit significant research achievements in the field of communication skills in elderly century [1]. Howard Giles, Ellen Bouchard Ryan and Ann P. Ans pay special attention to the need for research not only in the area of intergenerational communication, eg. Nurses with older people, but most of all intra-generational (between old people) [12].

It should be emphasized that the changes in seniors do not concern only the speaking skills, but also reading, writing and listening. All these functional efficiency of processes analogous committed, so. programming. So in order to evaluate in a thorough manner one of these competencies should take into account other developmental changes resulting from the aging [1].

Assuming that the use of language requires a man of many skills: perceptual, cognitive and memory, any doubts about the ability to combine these with age are unfounded. Reviewing the literature related to developmental psychology, you can find detailed descriptions of the limitations associated with the physiological aging process [13,14]. With age there are changes in the central nervous system, muscle, stomatognathic, respiratory and phonation. Often diagnosed as genital disorders: hearing and sight. Anatomical and functional changes affect mainly the realm of executive speech. This is connected with another voice prosody and acoustics. The intensity of the voice of women decreases, while the male voice increases. Aerobic capacity is reduced which results in shorter phonation. Resonance can become a voice trembling, with a sharp sound [15,16]. Also, modifications within the stomatognathic system will affect the language of the elderly, in particular its aspect in the form of speech. Will directly affect missing teeth (even if the prosthesis). This contributes to deviation from the correct pronunciation of sounds [17]. Approximately 50% of older people (after 80 years) diagnosed varicose underside of the tongue and parts sublingual, reduced saliva production and sagging and loss of muscle fibers chewing [16.18]. These hinder food intake disorders and swallowing, and this results in a lack of training of the natural organs of speech and, consequently, decrease the efficiency of articulators.

The impact of aging on the use of language can be observed in the process of perception, but also the production of speech. Changes in the perception of speech are associated with modifications cognitive, perceptual transformation capabilities old man. It has been shown that defects in the field of visual and auditory perception directly affect speech [4,19,20,21,22,23,24]. It is important that elderly people have no problem in the reception of speech, when the pace of delivery of information is normal, and the general conditions prevailing favorable to focus. The difficulty arises, however, when too fast delivery of information by the sender [25].

In the production of language senile changes are observed at all levels of posts: phonological, syntactic and semantic. Research confirms the reduction of naming skills, committing more errors, extension of time naming, in a group of people over 70 years compared to younger

group [26]. This phenomenon is justified by the general extension of the response time of the elderly, the transformation of the camera speech articulation slowdown [9,26]. With age also reduced verbal fluency. In studies M.Kielar-Turskiej [4] not been found difficult in the administration of seniors synonyms and antonyms in 3 categories (specific words, indirect, abstract). In contrast, the variable level of specificity in the form of meaningful words - was statistically significant compared with younger. Elderly most efficiently they served synonyms and antonyms for words about the importance of specific, less to the words of an intermediate character, and the most difficult words to the content of the abstract. According to the author of the study, patients often reported that they have a problem with word recall, despite having it in memory. Often also they used some other words to substitute appropriate. Similar observations can also be found in the works of other authors [27].

At the syntactic level of language processing notes the many changes occurring in the population over 74 years [4,28,29]. They outline three areas syntactic level of cohesion, complexity and grammar statements [9,29]. The decrease in the cohesion of expression is observed mainly in the narrative of the elderly when the individual threads are less intertwined [28]. Noted a decline in use and decrease the accuracy anaphoras and conjunctions in order to combine statements [30, 31]. Reducing the complexity of expression noted in the application by the elderly smaller number of complex sentences repeatedly compared to the younger group, and dominance in the statements of simple sentences. It is also observed lengthening the time required to build a complex sentence by seniors [32]. In the scope of the grammatical correctness of utterances, in the elderly the number of errors in the use of pronouns increases and incorrect word relationships are created [31].

Significant change communication skills are also elderly. The authors [30] point to the reduced value of the communicative elderly people between 65 and 74 years of age In the statements of senior citizens more effectively performing the functions of speech are instrumental (I want) and information (I have something to say) and much less about the heuristic function (tell me why) and imaginary (imagine that) [4]. In literature observed phenomena of communication, which are more prevalent in the elderly. The first phenomenon is known as "I have it on the tip of my tongue" (tip-of-the-tongue - TOT). Usually when there is a TOT, a person can indicate semantic or grammatical features of your search term [33]. It happens in patients in all age groups. The people seventy years have strategies for dealing with TOT similar to the younger group, ie. By associating words eg. Instead of the word eccentric say exotic [34]. Differences emerge from 80 years of age, when the binding of the

words is less effective, and patients do not serve as a substitute for any word [16]. Another phenomenon present in communication with seniors is off-target verbosity (OTV). It is associated with a decrease with age, consistency of expression, a growing number of denunciations. Such statements are characterized by a departure from the main thread, even if it was clearly marked at the beginning of request [4]. Characteristic is the influx of information provided by the caller, slowing of thought processes and increase talkative tending to personal narrative. The statement is extended, overly elaborated, without focusing on the main thread [16]. In their statements, the elderly appears a large number of reminiscences referring to past patients, even if they were not related to the subject of conversation [4]. OTV phenomenon correlates with age, gender (more common in older men), as well as topic of conversation and stress. OTV phenomenon especially in the narrative is triggered on the memories, the history of private life [34]. Research M. Kielar-Turska and K. Byczewski seniors over statements show that described the phenomenon does not apply to the entire group of elderly people. Posts seniors who undertake educational activities, are more consistent communication, without digression [4]. To diagnose the occurrence of OTV in an interview a person, you must recognize two basic factors: extensive, rich in detail and statement of lack of focus on the basic threads. This phenomenon can have a significant impact on everyday communication senior. Conversation in which a large number of digression, failure is the main thread and the sentence spoken by the caller are too complex and may be difficult in the perception and understanding. In addition, the listener may feel that talking to a self-centered, which is not interested in the interaction [35].

Summary

Communication language accompanies every human being at all stages of development. Together with age way to communicate with the environment undergoes numerous modifications. Analysis of the literature on language in the elderly, which are the physiological process of aging indicates that the modification process is both perception and production of speech. Speech seniors is a reflection of the changes in cognitive function within both the basic and higher. Research on the use of language by seniors are an interesting topic for an interdisciplinary group of specialists. Among them we can distinguish speech therapists, psychologists, gerontologists, etc. In order to delay the aging process in the field of cognitive and linguistic advised to inspire the elderly to educational activity, providing them thus improving the quality of life.

References

1. In Tłokiński, Olszewski H. Speech disorders related to aging. W: S Milewski, Kuczkowski J, Bray-Kaczorowska K. (Ed.). Biomedical foundations of speech therapy. Gdańsk: Harmonia Universalis 2017: 410-428
2. Grabias S. Speech and its disorders. *Speech Therapy* 2000; 28: 7- 36.
3. Grabias S. Perspectives description of speech disorder. In: Grabias S. (Ed.). *Speech disorders. Speech. Theory - Practice* 2001: 11-43.
4. Kielar-Turska M-Byczewska necessary K. The specific properties of use of the language by people aged senioralnym. W: S Milewski, Kuczkowski J, Bray-Kaczorowska K. (Ed.). *Biomedical foundations of speech therapy. Gdańsk: Harmonia Universalis* 2017: 429-443.
5. Maciejewska A. Stabilizing the interactive standards in the elderly. In: Grabias S Panasiuk J Wozniak T. (Ed.). *Standards of speech therapy speech therapy. Lublin UMCS* 2015: 1109-1124.
6. Speech Tłokinski W. people at the end of life. Warsaw 1990.
7. Olszewski H. frontotemporal dementia. *Recognition neuropsychological. Kraków* 2008.
8. Pałchalska M, L Bidzan frontotemporal dementia. *Interdisciplinary shot. Kraków* 2012.
9. Stuart-Hamilton, I. *Psychology of aging. Introduction. Trans. A. Błachino. Poznan* 2006.
10. Wachtin NB Gołowko EW. *Socjolingwistika and sociology of language. Uczebnoje posobije, Saint-Petierburg, Izdatielskij Centr "Gumanitarnaja Academy, Jewropejskij uniwersitiet in Saint-Pietierburgie; 2004: 84.*
11. Tłokiński W. *People talking at the end of life. Warsaw* 1990: 15.
12. Milewski S Kaczorowska-Bray K. *Gerontologopedia Do I Need? Will meet speech therapy from the perspective of adulthood. In: Michalik M. (Ed.). New Speech Therapy, Diagnosis and speech therapy adults and the elderly. Krakow* 2014: 13-26.
13. Olszewski H. 13. *Old age and longevity: attribution of development. Gdańsk, 2003.*
14. Trempała J. *Psychology of human development. Warsaw, 2011.*
15. A Nobili, Adwersi R. *Relationship between posture and occlusion: A clinical experimental investigation. The Journal of Craniomandibular Practice* 1996; 14 (4): 274-285.
16. Gebreselassie J Godlewska D. *Linguistic communication elderly. Language. Religion. Identity* 2017; 1 (15): 21-33.
17. Pędich W. *Old age. In: Gomulka S Rewerski W. (Ed.). Encyclopedia of health. Warsaw* 2000: 914-931.

18. Pluta-Wojciechowska D. Gerontologopedia - the original perspective scientifically speech therapy and training. In: Michalik M. (Ed.). *New Speech Therapy, Diagnosis and speech therapy adults and the elderly*. Krakow 2014: 27-39.
19. Lubczyńska-Kowalska W. Health aspects of aging and old age. Between the inevitable and what is possible. *Psychological and medical aspects of aging. Newsletter Section PTP Developmental Psychology*, 2005; 3: 28-34.
20. PB Baltes, Lindenberger, U. Emergence of a powerful connection between sensory and cognitive functions cross the adult life span: A new window to the study of cognitive aging? *Psychology and Aging* 1997; 12: 12-21.
21. Pichor MK-Fuller, Singh G. Effects of an age auditory and cognitive processing: Implications for hearing aid fitting and rehabilitation *Audiologic. Trends in Amplification* in 2006; 10: 29-59.
22. Rabbit P. Secondary central effects on memory and attention mild hearing loss of the elderly. *Neurologica Scandanavica Acta* 1989; 40A: 167-187.
23. Halling DC Hume LE. Factors affecting the recognition of reverberant speech to elderly listeners. *Journal of Speech, Language, and Hearing Research* 2000; 43: 414-439.
24. Phillips SL, Gordon-Salant S, Fitzgibbons PJ, G. Yeni-Kombshian *Journal of Speech, Language, and Hearing Research* 2000; 43: 217-228.
25. Tun P Wingefield A Stine EAL. Speech-Processing Capacity in Young and Older Adults. A Dual-Task Study. *Psychology and Aging* 1991; 6 (1): 3-9.
26. Berresi BA, Nicholas M, Connor LT, Obler L, Albert ML. Lexical and semantic degradation Access in age-related naming failures. *Aging, Neuropsychology, and Cognition* 2000; 7: 169-178.
27. Berk LE. *Development through the lifespan*. Illinois State University in 1998.
28. Kemper S. Adult sentence fragments: Who, what, when, where and why. *Communication Research* 1992; 19: 332-346.
29. Kemper S, Rash SJ. Speech and writing across the life span. In: Grüneberg MM Morisse PE, RN Sykes. (Ed.) *Practical Aspects of Memory, Current Issues and Research*. Chichester: Wiley; 1988: 107-112.
30. Hupet M, Chantraine Y, Nef F. References in Conversation between Young and Old Normal Adults. *Psychology and Aging* 1993; 8 (3): 339-346.
31. Kemper S. Life-span changes in syntactic complexity. *Journal of Gerontology* 1987; 42: 323-328.

32. Davidson DJ, Zacks RT, Ferreira F. Age preservation of the syntactic processor in production. *Journal of Psycholinguistic Research* 2003; 32: 541-566.
33. Miozzo M, Caramazza A. Retrieval of lexical syntactic features-in tip-of-the-tongue states. *Journal of Experimental Psychology: Learning, Memory, and Cognition* 1997; 23: 1410-1423.
34. Swiatek A specific phenomenon of communication senioralnym age. *Art Therapy* 2007; 14 (1-2): 69-78.
35. Gold Pushkar DP Basevitz P Arbuckle T, Nohara-LeClair M, S Lapidus, M. Social behavior Peled and off-target verbosity in elderly people. *Psychology and Aging* 2000; 15: 361-374.