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ORAL EXPRESSION SKILLS OF PEOPLE WITH DEMENTIA

Навички усного мовлення у людей з деменцією

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Abstract

Communication includes both linguistic and nonlinguistic forms and oral communication is the linguistic communication that exchanges information vocally and aurally. This process can be affected by various reasons and neurodegenerative diseases are one of them. In dementia, which is defined as a neurodegenerative disease, oral expression skills can be impaired in different ways. Linguistic problems can be observed in these patients' speech. In this context, the oral expression skills of people with dementia of the Alzheimer type were analysed in this study. By using description tests both control group and Alzheimer group were compared within the use of verbal and nominal sentences. It was found out that these patients tend to use verbal sentences more in their oral speech. However, when compared to the control group the use of nominal sentences were higher.

Key words: *oral expression, dementia, nominal sentences, verbal sentences.*

Introduction

Вступ

The oral communication process is considered effective when it is clear, precise, relevant, tactful, considerate, concise, informative, and adapted to the needs of both speaker and listener (Mora, 2021). In oral expression, there is a type of interaction between individuals which makes use of words, sentences etc. This interaction includes a good organisation of content, grammar, pronunciation and fluency. If there are some problems in

one of these elements, the activation of this process will be impossible. These problems can be related with brain illnesses.

Brain illnesses are one of the toughest challenges that humans face. They have a huge impact on length and quality of life and they make many forms: neurodevelopmental disorders like epilepsy and autism, mental health problems like depression and anxiety, neurodegenerative conditions like dementia, Alzheimers's disease and etc. (Taylor, 2020).

Dementia is an acquired condition which involves multiple cognitive impairments that are sufficient to interfere with activities of daily living (Barkof & Buckem, 2016). Dementia is thought to be a problem of old age. However, it can occur in younger people. Dementia is a problem with cognition and especially memory. It appears first as short-memory failures, word-finding difficulties etc., then it progresses to more troubling difficulties (Taylor, 2020). It has different sub-types and Alzheimer's disease (AD) is the most common form of it.

AD is described as the leading cause of dementia. Currently, there are 47 million individuals worldwide who are suffering from dementia and it is believed that by the year 2050, about 131.5 million people will have AD or another form of dementia (Bayles, McCullough & Tomoeda, 2018). Its course is marked by a continual loss of neurons and their connections with other neurons that are crucial to memory and other mental functions (Growdon, 2009). Adults with AD present with insidious, progressive impairment of episodic memory, with the emergence of aphasia, apraxia and executive deficits as disease progresses (Cummings, 2020).

Communication is the sharing of information by means of a symbol system. It can be called linguistic when words are used and non-linguistic when other symbol systems are used. Both linguistic and non-linguistic communications are impaired in AD because both are cognitive processes for sharing and interpreting information and information processing is progressively disrupted. Linguistic communication is the cognitive process of intentionally sharing ideas through language. As cognition is affected in AD and the production and comprehension of language cannot be separated from cognition, AD patients have language deficits (Bayles, McCullough & Tomoeda, 2018). Language deficits in AD were studied in many research and according to these research there are major language difficulties in several aspects of language production, such as anomia, impoverished idea density and discourse coherence and a decline in grammatical complexity. Grammatical complexity clinically manifests itself through the use of less structurally complex sentences in individuals with cognitive decline (Filiou et al., 2020).

There are three stages of AD: mild, moderate and severe. Each stage is referenced by degrees of memory loss, activity, sleep disturbance, and other characteristics (Turkington & Mitchell, 2010). Linguistic communication skills of individuals with mild,

moderate and severe AD have been well documented. Those whose dementia is mild generally have longer hesitations and a slower rate in spontaneous speech. However, speech is fluent with no evidence of dysarthria or articulation errors. In moderate stage, speech is fluent, though often slower and filled with more silent pauses that occur outside syntactic boundaries. Also their narratives are less complex. In the last stage, the form of language remains intact and some individuals are mute (Bayles, McCullough & Tomoeda, 2018).

In many research, it is mainly stated that by analysing speech and language production, neurological function of AD patients can be revealed. Especially focusing on words and sentences in the analysis of the speech and language production gives important clues about oral expression skills of AD patients (Voletti, Liss & Berisha, 2019). Within this framework, it was aimed to reveal the oral expression skills of late-onset AD (LAD) patients via picture description tests.

Methods and Techniques of the Research *Методи і процедури дослідження*

In this study, the oral expression skills of LAD patients were analysed. LAD is defined as an onset of the disease after 65 years of age. This form of AD is more prevalent and most cases are believed to be sporadic, with no family history of the disease. LAD typically progresses more slowly, although there is substantial variability in rates of decline among individuals with the disease (Weyandt, 2018). Totally, 39 LAD patients were included in this study and the mean age of them is 59.86 and all of them were diagnosed as mild or moderate LAD. In order to analyse their oral expression, picture description tests were used. Picture description tests are useful tools for detecting differences in a wide variety of language and communicative measures (Mueller et al., 2018).

Four language tests were used in this study: Picnic Picture Description Test (from Western Aphasia Battery, Revised: Kertesz, 2007), Cookie Theft Picture Description Test (from Boston Diagnostic Examination of Aphasia: Kaplan, Goodglass & Weintraub, 2001), Picture Story Sequencing Test and Subject-based Narration Test. The recorded speeches were transcribed based on the symbols identified by DuBois et al. (1993). All language tests were also performed by the control group (CG). The oral expression of both LAD and CG group were analysed in terms of nominal and verbal sentences. The data obtained from the syntactic analysis were interpreted by appropriate statistical analysis which are Chi-square test and median test.

Results

Результати

According to the results obtained from the language tests, there was significant difference within the use of nominal and verbal sentences ($p=0.000<0.05$). In all tests, a statistically significant difference was found between the LAD and CG with 95% confidence, in terms of forming or not forming a nominal and verbal sentence ($p=0.000<0.05$). Looking at the percentages, the LAD group used more nominal sentences in the picnic picture description test, cookie theft picture description test, and picture story sequencing tests compared to the control group. The control group produced more verbal sentences. However; in subject-based narration test it was revealed that the CG group used more nominal sentences while the LAD group used more verbal sentences.

By using the qui-square test, the relationship between being sick and forming a nominal and verbal sentences was revealed. Then, the median test was used in order to reveal whether this difference is a significant difference or not. In all tests, there was a significant difference between the LAD and the CG in terms of nominal and verbal sentences between LAD and CG ($p=0.000<0.05$). This result reveals that the LAD group used more nominal sentences in the picnic picture description test, cookie theft picture description test, and picture story sequencing tests compared to the CG. In the subject-based narration test, unlike the other tests, it was revealed that the LAD group used more verbal sentences than the CG.

After these analysis, the distribution of the use of nominal and verbal sentences according to the four language tests were examined. When the data of the LAD group is examined, it is seen that there is a statistically significant difference with 95% confidence between sentence types and four language tests ($p=0.000<0.05$). This means that the nominal and verbal sentences produced by the LAD group differ according to the four tests. When examined in detail in terms of percentages, the LAD group used nominal sentences more in all picture description tests.

As a result of all these comparisons, it was revealed that in their oral expression, LAD patients performed different from CG in terms of nominal and verbal sentences.

Conclusions

Висновки

As analysed in this study, the oral expression skills of LAD patients were differentiated. LAD patients produced more nominal sentences and less verbal sentence compared to the subject group.

In literature, studies examining the distribution of these sentences based on nominal and verbal sentences, could not be found as done in our study. Studies are generally related with the other sentence types. According to the data obtained from these studies, the performance of LAD patients in language tests is worse than the control group (Can et al., 2018, 2019, 2021). In literature, there are some researches aimed to analyse the syntactic abilities of AD patients. Only a small portion of studies have investigated AD abilities on sentence production and morphosyntactic production abilities (as cited in Curti, 2020). There are also several studies related to informative language and speech features and they reveal that these features capture problems with word retrieval, semantic processing, acoustic impairment, and errors in speech and communication (Petti, Baker & Korhonen, 2020).

The other studies are mostly related with the use of nouns and verbs. For example in their study, Beber et al. (2015) examined the verb production of AD patients using picture description tests, and stated that verb production is a function mostly related to the frontal lobe, and it was explained that verb production is impaired in AD patients due to atrophy in this area.

According to all the results obtained from our study, the oral expression skills of AD patients are different from healthy individuals in terms of both nominal and verbal sentence types. This difference can be explained by the fact that AD causes neurological deterioration in individuals. The deterioration in the memory and linguistic areas of the brain, which are especially important in terms of the realization of linguistic functions, also causes differences in sentence structure. In other words, AD patients tend to use clauses that do not require members and are easier to process in their oral expression.

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