

Dissertation for the doctoral degree in medical sciences and health sciences in the discipline of health sciences

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Title: Verbal fluency disorders in people with cognitive dysfunctions in neuropsychological and linguistic terms.

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## **SUMMARY**

The aim of the study was to analyse the results of verbal fluency tests (phonological and categorical) in people with functional disorders in the context of corpus analysis according to the Polish National Corpus (PNC). Archival data of 279 people, 177 women and 102 men, with cognitive impairment, aged 50-91 (mean in 72.00 + 10.47) years underwent a deep analysis. The results of the verbal phonological (letter test) and categorical (categories "animals" and "sharp objects") and the results of the screening test for MMSE dementia were used. The method of linguistic corpus analysis consisting in the automatic extraction of words from the verbal fluency test and grouping them according to the frequency of their occurrence in Polish was implemented. Non-parametric tests were used in a statistical analysis, the Mann-Whitney U test was used to compare the results between the two groups, in the analysis of the R-Spearman test, in the assessment of internal compatibility of the applied tools, the alpha-Cronbach index and factor analysis of the principal components were calculated. Furthermore, the ANOVA test was used in the prediction analysis.

The greater severity of phonological and categorical verbal fluency disorders was associated with a higher severity of cognitive disorders in MMSE and a longer duration of cognitive disorders. Critical time points related to the intensification of verbal fluency disorders were identified. The analysis of predictions showed that, based on the results of the MMSE test, it is possible to predict a deterioration in the efficiency of verbal fluency. Along with the progressive weakening of verbal fluency in the group of people with cognitive disorders, the most persistent words are the most commonly used bundles according to the Polish National Corpus.

The most sensitive test of misspelled words is the phonological fluency test, especially in the group of women. A longer period of cognitive impairment was associated with a greater loss in the generation of words most commonly found in the Polish language. Verbal fluency and MMSE tests have a high internal consistency, which indicates their similar etiological mechanism and a high usefulness in the study of the group of elderly people with cognitive disorders.

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