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## Research Article

# Symptoms of Cognitive Deficit in Late-Life Depression: Neuropsychological Analysis -

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## ABSTRACT

The article presents an analysis of the symptoms of neurocognitive deficit in late-life depression, revealed in the neuropsychological diagnostic study of 197 patients with depression (average age 68 + 13 years), who were on inpatient treatment in the clinic of the Scientific center of mental health (Moscow). The results of the study allowed describing the features of memory, attention, and different types of perception, voluntary movements and actions, speech functions, thinking in late depressions. The author of the article formulated assumptions about possible variants of localization of brain dysfunctions in late depression, the degree of severity of neurocognitive deficit. The findings state that various manifestations of neurocognitive deficit in late-life depression are observed quite often.

**Keywords:** Depression; Cognitive Deficit; Brain Mechanisms; Aging

## INTRODUCTION

In recent decades, many countries have experienced a significant increase in the number of elderly and senile people [1-3]. The frequency of certain mental illnesses, primarily affective disorders, has also increased accordingly. Affective disorders of the depressive spectrum are now one of the central objects of research in psychiatry, in neurology, in clinical psychology. Interest in these diseases is primarily related to demographic factors, in particular, the increase in the frequency of depression disorders in late life [4-6]. In studies of late-life depressions, special attention is paid to their brain mechanisms: the contribution of different brain hemispheres to the genesis of affective disorders, symptoms of frontal, temporal, and subcortical dysfunction [7-9]. With dysfunctions of these brain zones and structures, patients have difficulties in the solution of various problems, fluctuations in attention and control function, a decrease in certain memory parameters, a lack of inclusion in the performance of tasks, and other symptoms. A number of data indicate a negative impact of cognitive impairment on the dynamics of clinical manifestations and the possibility of effective therapy of late depression [6,10]. The goal of our study was to analyze the frequency of occurrence of various neuropsychological syndromes in patients with late depression and describe the main symptoms of changes in mental functions in such patients.

## METHODS

All participants underwent a comprehensive neuropsychological examination [11,12]. This survey included diagnostic methods aimed at studying perception, memory, voluntary movements and actions, speech functions, attention, thinking, “energy” and regulatory components of mental activity. Qualitative analysis of the results, their interpretation in the context of the methodology of the Luria’s syndrome approach, as well as quantitative processing, were carried out.

## PARTICIPANTS

In the study, 197 patients of Mental Health Research center (Moscow, Russia) with depression (average age 68+13 years) were voluntarily admitted. Neuropsychological examination of patients was performed on the recommendation of the attending medical doctor. Patients had the following diagnoses: recurrent depressive disorder (F33) - 93 patients; bipolar affective disorder (F31) – 46 patients; depressive episode (F32) – 24 patients. In addition, a separate group of patients with other types of depression was identified – 34 patients. The studied sample was dominated by apato-adyamic and anxiety depressions of moderate severity.

## RESULTS AND DISCUSSION

The neuropsychological examination revealed a group of patients (100 persons) with dysfunction of subcortical brain structures. In 13 patients with depression, dysfunction of subcortical structures was combined with changes in the work of the posterior (mainly temporal and/or parietal) parts of the brain; in 47 patients – with changes in the work of the anterior (frontal) parts of the brain. In 35 patients, the brain dysfunction was more extensive: along with the dysfunction of subcortical formations, symptoms were observed from both the posterior and anterior parts of the brain. Finally, in 2 persons, neuropsychological examination revealed no pathology of mental functions and cognitive activity.

The results of the study showed that certain symptoms of dysfunction of the **subcortical structures** of the brain were found in all patients with depression without exception. At the same time, the manifestations of subcortical dysfunction were variable. Some of them reflected General changes in the “energy” support of mental activity and could be observed when performing almost any task of neuropsychological examination; others were more “local” in nature and were detected only in certain types of motor or graphic activities. Thus, difficulties in including tasks, fluctuations in voluntary attention and achievement levels were most common, and the slow pace of implementation of tasks, exhaustion, micrographics and tremor were less common.

Among the symptoms associated with the **posterior parts** of the brain, small errors in optical-spatial tests and in tasks of acoustic non-speech gnosis dominated. There were also difficulties in memorizing and delayed reproduction of auditory-speech material [13]. Dysfunction of the **anterior parts** of the brain was most often expressed in a lack of control, impulsivity, lack of criticality for mistakes, and violations of dynamic organization of movements.

## CONCLUSION

In conclusion, it should be said that various manifestations of neurocognitive deficit (in terms of components and degree of manifestation) are observed quite often in late-age depressions. Therefore, therapy for late depression should be aimed not only at optimizing the affective status of patients, but also at compensating the certain aspects of cognitive functioning.

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