

MOLDOVA STATE UNIVERSITY
Doctoral School of Social Sciences

With manuscript title

C.Z.U: 159.9.019.4:159.9.072.59:616.853(043)

DOȚEN NATALIA

**COGNITIVE, AFFECTIVE AND BEHAVIOURAL FEATURES OF INDIVIDUALS
WITH DRUG-RESISTANT EPILEPSY**

511.01 GENERAL PSYCHOLOGY

**Scientific summary
of the Doctoral Thesis in Psychology**

CHIȘINĂU, 2023

The thesis was developed within the Doctoral School of Social Sciences, State University of Moldova

Doctoral Commission:

Chairperson:

PALADI Oxana, habilitated doctor of psychology, associate professor, State University of Moldova

Scientific Supervisor:

1. BOLEA Zinaida, doctor of psychology, associate professor, State University of Moldova

Official References:

2. PLATON Carolina, doctor of psychology, habilitated doctor in pedagogy, university professor, State University of Moldova.
3. GLAVAN Aurelia, habilitated doctor in psychology, associate professor, „Ion Creangă” State Pedagogical University of Chişinău.
4. CERNIŢANU Mariana, doctor of psychology, associate professor, „Nicolae Testemiţanu” State University of Medicine and Pharmacy of the Republic of Moldova.

The thesis defence will take place on 31 October 2023, at 14:00, in the meeting of the Doctoral commission within Moldova State University, str M. Kogălniceanu 65, 3rd bl, hall. 507, MD-2012.

The doctor thesis and the scientific summary can be consulted at the National Library of the Republic of Moldova, at the Library of the State University of Moldova and on the website of ANACEC (www.anacec.md).

The scientific summary was sent on 29.09.2023.

Secretary of the Doctoral Commission:

Romica Brâncoveanu, university assistant

Scientific Supervisor:

Bolea Zinaida, doctor of psychology, associate professor

Author:

Doţen Natalia

CONTENT

1.	Conceptual references of the research.....	3
2.	Thesis content.....	7
3.	General conclusions and recommendations.....	23
4.	Bibliography.....	26
5.	List of the authors publications on the topic of the thesis.....	29
6.	Annotation (<i>in romanian, russian and english</i>)	32

CONCEPTUAL REFERENCES OF THE RESEARCH

The actuality and importance of the topic addressed. According to international statistics, epilepsy is the fourth most common neurological disorder affecting people worldwide, being a chronic neurological disorder that affects between 1%-2% of the population. According to WHO data, currently about 50 million people suffer from epilepsy, about 30% of these people are diagnosed with drug-resistant epilepsy [65]. According to the ILAE, drug-resistant epilepsy is defined as "failure of adequate trials of two tolerated, appropriately chosen and used antiepileptic drug schedules (whether as monotherapies or in combination) to achieve sustained seizure freedom" [8, 52]. According to data provided by the National Bureau of Statistics, the prevalence of epilepsy in the Republic of Moldova, in 2021, was 25 cases per 10 000 inhabitants, and the incidence ratio was 2.1 cases per 10 000 inhabitants.

Epilepsy has been known since ancient times. The first observations date back to the time of Hippocrates, the most famous physician of Ancient Greece (5th century BC), who characterized epilepsy as a "holy disease" (lat. *Morbus sacer*) caused by a disorder of brain function [26]. However, for about 2000 years, epilepsy was considered a disease related to supernatural forces, and only in the 17th century, the english neurologist H. Jackson defined epileptic seizures as a result of the sudden electro-chemical discharge of energy in the brain, specifying that the appearance of the seizure depends on the location of the discharge [44]. Currently, the world accepted definition is that of ILAE from 2014, according to which "epilepsy is a disorder of the brain characterized by an enduring predisposition to generate epileptic seizures, and by the neurobiologic, cognitive, psychological, and social consequences of this condition". The definition of epilepsy requires the occurrence of at least one epileptic seizure. An epileptic seizure is a transient occurrence of signs and/or symptoms due to abnormal excessive or synchronous neuronal activity in the brain [40].

At the present time, international studies show that the consequences of drug-resistant epilepsy involve multiple psychological problems, such as cognitive decline, emotional and behavioral disturbances, loss of autonomy, stigmatization, psychosocial dysfunction, increased risk of trauma, and even premature death - all of which contribute to decreased quality of life [9, 52].

It is already known that epilepsy is burdened by comorbid disorders, which in some cases are more disabling than epileptic seizures *per se*. Current studies demonstrate that approximately 50% of adults with epilepsy have at least one comorbid medical disorder [28, 60]. In psychological terms, cognitive, affective and behavioural disorders are the most common comorbidities in epilepsy [18, 20, 28, 43, 48, 49, 57], moreover, the latest studies in the field demonstrate that cognitive disorders are already present in the onset of epilepsy [25, 47, 64]. At the same time, studies reveal that in epilepsy with well-controlled seizures, cognitive impairment is more subtle, then in chronic, drug-resistant epilepsies - cognitive impairment is observed in about 70-80% of individuals [37, 41, 56].

Framing of the theme in the international, national, regional concerns of the research team, as well as in an inter- and trans-disciplinary context, presentation of previous research results. Historically, cognitive, affective, and behavioural problems have been recognised in people with epilepsy since ancient times but were documented in the neuropsychological literature in the 19th century. The development of neuropsychological science is marked by the discoveries of scientists - F.J. Gall, P. Broca, K. Wernicke, K., A. P. Лурия, Л. С. Выготский, N. Geschwind, K.S. Lashley, H. Hecaen, J.B.

Bouillaud and B. Milner. All these researchers have contributed to a better understanding of the relationship between cerebral localization and cognition, affectivity and behaviour [2, 16, 19, 53].

Currently, the problem of epilepsy in the world is intensively studied, the most current concerns in the field of neurology and neuropsychology are related to drug-resistant epilepsy, modern medical treatment of epilepsy, epilepsy surgery, the impact of epilepsy on mental functioning and the quality of life of people with epilepsy [21, 27, 39, 43, 47, 63].

At the same time, it is important to mention that the most current and valuable psychological interventions in epilepsy concern the evaluation of the cognitive, affective and behavioral dimensions of people with drug-resistant epilepsy undergoing epilepsy surgery. In this regard, the ILAE Neuropsychology Task Force Diagnostic Methods Commission (2019), consisting of well-known researchers such as S. Baxendale, G. A. Baker, J. Wilson Sarah, W. Barr, C. Helmstaedter, B.P. Hermann, *et.al.*, come up with a series of indications and recommendations regarding pre- and post-surgical psychological evaluation in drug resistant epilepsy. These recommendations include psychological evaluation of people with drug-resistant epilepsy in order to evaluate the suitability of candidates for epilepsy surgery, to provide evidence-based predictors of cognitive risk associated with proposed surgery and establish a baseline against which change can be measured following surgery [27]. Another report of the ILAE Neuropsychology Task Force (2013-2017) regarding psychological indications in routine epilepsy care, recommends the screening of cognitive, emotional, behavioral and psychosocial functioning at the onset of epilepsy and in dynamics, once a year, as well as the collaboration of the psychologist with the epileptologist [66].

With reference to the dimensions investigated in our paper (cognitive, affective and behavioural), there are numerous international studies that highlight the impact of epilepsy on these psychological dimensions. Regarding the cognitive dimension, researchers S. Baxendale (2020), D. L. Drane (2014), C. Helmstaedter (2017), C. Elger (2004), J.A. Witt (2017), B. Hermann (2007), P. Kwan (2011), M. Brodie (2012), S.J. Wilson (2015), A.M. Kanner (2018), C. Dodrill (2004), G. Holmes (2015), G. Vingerhoets (2006), A. Gavrilovic (2019), G. Baker (2011) analyse the impact of epilepsy on cognitive functions and highlight the effect of drug treatment on memory, attention, language and reaction speed [37, 38, 41, 42, 47, 49, 56, 60, 61]. At the same time, the researchers mentioned above consider that the high frequency of epileptic seizures contributes to a progressive cognitive decline. Most studies demonstrate that cognitive impairment worsens with prolonged illness, and the latest research in the field suggests that cognitive impairment is already present in the early phase of the disease [25, 64, 42].

Concerning the affective dimension, scientific research highlights that the most common affective disorders in people with epilepsy are anxiety and depression, with a greater prevalence of these symptoms in drug-resistant epilepsy. The most conclusive studies on the prevalence of depression and anxiety, as well as on the impact of these conditions on people with epilepsy, have been conducted by O. Devinsky (2005), A. M. Kanner (2005, 2011, 2012), M. Mula (2013), D.C. Hesdorffer (2000), Gaitatzis (2004), H.S. Cotterman (2010), M.G. Vaccaro (2018), Oh-Young Kwon (2014), D.A. Baker (2019), C. Brandt (2016) and J.F. Tellez-Zenteno (2007) [29, 34, 45, 46, 50, 55].

With reference to the behavioural dimension in epilepsy, researchers - O. Devinsky (1993, 1984), L. Van Elst (2002), B. Hermann (2021), D.C. Hesdorffer (2012), S. Cottermann (2010), O.Y. Kwon (2016), K. Valente (2016), M. Brodie (2016), G.L. Holmes (2007), A. Piazzini (2012) and K.R. Alper (2002) argue that behavioural manifestations such as irritability, aggression, depression, apathy are specific to people with epilepsy and are more pronounced in people with drug-resistant epilepsy [24, 28, 30, 35, 43, 49, 51].

A particular interest in the cognitive, affective and behavioural dimensions of epilepsy has also been identified by well-known Romanian researchers. For example, D. Vanghelie (2017) studied cognitive disorders in epilepsy and M. Bolocan (2021) researched memory and language in people with

drug-resistant epilepsy. Also, behavioural specificity and epileptic personality have been investigated by M. Botez (1996) and F. Tudose (2011), and psychiatric comorbidities in epilepsy were studied by R.S. Gurgu (2021) [2, 13, 14].

In the Russian academic space the psychological peculiarities in epilepsy have been researched by O. V. Евдокимова (2023), Э. У. Б Насер (2023), Ю. Е. Мироненко (2017), В. А. Карлов (2007), Н. А. Сивакова (2016) Е. А. Народова (2018) [17, 21, 22, 23]. Other conclusive research on psychological comorbidities in epilepsy we find at Ukrainian researchers Л. Б. Марьенко (2021) and И. А. Марценковский (2015) and the researcher О. В. Кистень from Belarus (2014) [18, 20].

In the Republic of Moldova, until 2011, studies on epilepsy were realised in the Department of Psychiatry, Narcology and Medical Psychology of the State University of Medicine and Pharmacy "Nicolae Testemitanu". Psychiatric aspects related to the mental functioning of people with epilepsy were studied by researchers - G. Cărauş (2012), A. Popov (2013) and O. Cobileanschi (2018) [3, 5, 12].

With the establishment of the National Centre of Epileptology within the Institute of Emergency Medicine, neurological research on epilepsy has developed impressively in our country, thereby, several remarkable investigations, recognized worldwide, have been realized. The most appreciated studies were realised by researchers - S. Groppa (2021), V. Chiosa (2021), D. Ciolac (2020), A. Vataman (2023) and N. Gorincioi (2019) [4, 7, 8, 9, 15, 32, 33]. These extensive epilepsy research projects have subsequently allowed an enlargement of the research themes, with the following topics being addressed: genetic testing in epilepsy (S. Groppa, D. Catereniuc, V. Chelban. 2021), modern epilepsy management - brain stimulation (P. Leahu, 2021), epilepsy in the elderly (D. Drăgan, 2021), pediatric aspects of epilepsy (C. Călcîi, 2015; S. Hadjiu, 2017; L. Feghiu, 2022; A. Bunduchi, 2013), psychotherapeutic aspect of psychological trauma in epilepsy (E. Condratiuc, 2020) and cognitive, affective and behavioral features in epilepsy (N. Doţen, 2020, 2021, 2022) [4, 6, 10, 32, 39].

Currently, in the Republic of Moldova, we notice the absence of studies focused on cognitive, affective and behavioral dimensions in drug-resistant epilepsy, the lack of a protocol for psychological assessment of people with drug-resistant epilepsy, as well as the lack of intervention and psychological rehabilitation programs in drug-resistant epilepsy. Therefore, the need to research the cognitive, affective and behavioural features of people with epilepsy is determined by the lack of research on this issue, by the impressive number of people with drug-resistant epilepsy (about 30%), by the need to implement a national protocol for the psychological assessment of the people with drug-resistant epilepsy and development in psychological practice of effective psychological intervention and rehabilitation programmes, carried out in the medical, family, educational and community settings.

Given the above, the **research problem** we are formulating resides in the contradiction between the presence of psychological aspects, in the etiology, phenomenology and treatment of epilepsy and the lack of studies in the Republic of Moldova focused on the psychological dimensions associated with this diagnosis. In addition, we mention that the phrase "drug-resistant epilepsy" further accentuates the problem of psychological dimensions in epilepsy, since it refers to cases resistant to drug treatment.

The purpose of the research is to determine the cognitive, affective and behavioural features of individuals with drug-resistant epilepsy and to develop a psychological intervention program aimed at improving the cognitive, affective and behavioural processes of these people.

Research objectives: (1) to analyze and synthesize the specialized literature regarding psychological features of drug-resistant epilepsy; (2) to identify the cognitive, affective and behavioural features of individuals with drug-resistant epilepsy; (3) to compare the cognitive, affective and behavioural features of individuals with drug-resistant epilepsy with those with well-controlled epilepsy; (4) to analyze the psychological profile of the individual with drug-resistant epilepsy and of the individual with well-controlled epilepsy; (5) to develop a psychological intervention program to improve the cognitive,

affective and behavioural processes of the individuals with drug-resistant epilepsy and to evaluate its effectiveness.

The research hypotheses are:

1) we assume the existence of cognitive, affective and behavioural features in the mental functioning of people with drug-resistant epilepsy and that these features are more evident in people with drug-resistant epilepsy compared to people diagnosed with well-controlled epilepsy;

2) we assume that there is a relationship between the duration of the epileptic condition, the frequency of epileptic seizures and the quality of cognitive, affective and behavioural processes of people with epilepsy;

3) we assume that the implementation of a psychological intervention programme adapted to the cognitive, affective and behavioural features of people with drug-resistant epilepsy will contribute to the improvement of the cognitive, affective and behavioural dimensions of people with drug-resistant epilepsy.

The methodology of scientific research consists of:

1) *theoretical methods*: analysis and synthesis of specialized literature, the comparative method.

2) *empirical methods*: Montreal Cognitive Assessment Test (S. Nasreddine Ziad et al., 2005); Rey Auditory Verbal Test (A. Rey, 1964; M. Schmidt, 1996); Rey-Osterrieth complex figure (A. Rey A., 1941; P.A. Osterrieth, 1944); Trail Making Test (T.N. Tombaugh, 2004); F-A-S Phonemic Verbal Fluency Test (Spreen and Benton, 1977); Beck Depression Inventory (BDI) (A. T. Beck, 1961); Hamilton Anxiety Rating Scale (M. Hamilton, 1959); Buss-Durkee Hostility Inventory (A. Buss and A. Durkee, 1957) and Revised Cheek and Buss Shyness Scale (J. M. Cheek, 1983); clinical interview (I. Dafinoiu, 2002). This battery of tests, as well as the procedure for assessing individuals with drug-resistant epilepsy, has been validated by the State University of Medicine and Pharmacy "Nicolae Testemitanu" as certification of innovation on the subject "Neuropsychological assessment of patients with drug-resistant epilepsy", being recommended for implementation to clinical psychologists and used in clinical practice at the National Epileptology Centre of the Institute of Emergency Medicine;

3) *mathematical and statistical methods*: analysis of frequencies and percentage values, comparison of means by descriptive statistics, determination of Pearson correlation coefficients, difference of means by independent T-test and T-test/retest to calculate differences between group means before and after intervention, and ANOVA analysis of variance.

Novelty and scientific originality: this paper represents the first research conducted in the Republic of Moldova that focuses on cognitive, affective and behavioural features of drug-resistant epilepsy. The originality of the research lies in: the determination of psychological features specific to individuals with drug-resistant epilepsy; the identification of the differences between the specific features of individuals with drug-resistant epilepsy in comparison with individuals with well-controlled epilepsy; the development of the psychological profiles of individuals with drug-resistant epilepsy and those with well-controlled epilepsy; and the development of a complex psychological intervention program to improve the cognitive, affective and behavioral processes of individuals with drug-resistant epilepsy.

Approval of scientific results. The research results were approved by the Department of Psychology of the Faculty of Psychology and Educational Sciences of the State University of Moldova, presented and discussed at 14 national and international scientific forums.

Theoretical significance of the research: the research contributes to the existing theoretical framework by providing literature summaries on drug-resistant epilepsy; and adapting the concept to the field of general psychology by identifying and analyzing the cognitive, affective and behavioural features associated with drug-resistant epilepsy.

Implementation of scientific results: the scientific findings of this research have been presented and implemented in the scientific and methodological activities of the Department of Psychology at the Moldovan State University; as well as in the psychological and medical assistance provided by the Clinical Department of Neurology, STROKE and Epileptology; in the National Center of Epileptology; in the framework of the State “Integrating epileptogenic mechanisms to create a network of multimodal diagnosis and treatment of epilepsy” Program (2020-2023); and have been incorporated in the didactic activities of the Neurology 2 Department of the State University of Medicine and Pharmacy "Nicolae Testemitanu" of the Republic of Moldova, having as beneficiaries psychologists, neurologists, neurophysiologists, neurosurgeons and resident doctors.

Publications on the thesis subject. The basic content of the research is presented in 26 published scientific papers: articles in scientific journals and materials of national and international scientific conferences.

Thesis structure: introduction, 3 chapters, general conclusions and recommendations, bibliography containing 288 references, 22 appendices, 153 pages of main text, 32 figures, 21 tables, statement of responsibility and author's CV.

Keywords: cognitive features, affective features, behavioural features, drug-resistant epilepsy, well-controlled epilepsy, psychological profile of the individual with drug-resistant epilepsy, psychological profile of the individual with well-controlled epilepsy, psychological intervention.

THESIS CONTENT

The introduction presents the actuality and importance of the addressed topic, the framing of the topic in the international, national and regional concerns of the research group, in an inter- and transdisciplinary context, with presentation of the results of previous research related to the chosen topic, the purpose and objectives of the research, the hypotheses of the research, the synthesis of the research methodology and the reasoning of the chosen research methods, the summary of the thesis sections.

In Chapter 1 - Theoretical approaches to the psychological dimensions of epilepsy, the theoretical foundations of the psychological dimensions addressed in our research are presented, with reference to the issue of drug-resistant epilepsy. On the cognitive domain, the concepts of thinking, memory, language, attention are presented, and on the affective domain the concepts of depression and anxiety are presented. The concepts of aggression and shyness are also presented in the behavioural domain. This chapter summarises and analyses international studies on cognitive, affective, and behavioural features in individuals with drug-resistant epilepsy.

1.1. Cognitive dimension, conceptual delimitations

In this section, we have examined concepts related to the cognitive dimension of mental functioning, a topic of interest for current research, since any human task or activity involves these mental processes that are indispensable to life. Cognitive function refers to the human mental abilities involved in the cognition process, including aspects of awareness, perception, reasoning, intellect and decision-making, which enable us to interact with the world in an appropriate and effective way. According to M. Lezak (2004), cognitive function involves the realisation of knowledge, which is represented by thought, memory, attention and language, these mental processes being interdependent [53]. Therefore, thinking constitutes the highest stage of human cognition and can be defined as any mental operation that relates two or more pieces of information explicitly (an arithmetic calculation) or implicitly (everything that is done and learned unconsciously). Memory refers to the complex processes by which individuals encode, store, and consolidate information [13, 53, p.28]. The term attention refers to the cognitive function that allows us to focus on certain features of sensory stimuli or ideas while at the same time rejecting other distracting stimuli. The concept of language is the cognitive function most used by humans in the activity of communication, an activity through which they continuously exchange information about the external

environment [53, p.542]. Thus, we can conclude that thinking, memory, attention, language are human higher cognitive functions that help us to perceive, store and process information from external reality. These multiple mental abilities are involved in the process of knowing and learning and help us to interact with the world in an appropriate way.

1.1.2. *The cognitive dimension in epilepsy: syntheses and reviews of studies in the field*

Currently, according to the International League for the Control of Epilepsy (ILAE) in 2014, *epilepsy* is a neurological condition characterised by a persistent predisposition to generate epileptic seizures, and is associated with neurobiological, psychological and social consequences. *Well-controlled epilepsy* is defined as response to antiepileptic treatment such that patients are seizure-free or have less than one seizure per year, and *drug-resistant epilepsy* is defined as "therapeutic failure of two or more correctly chosen antiepileptic drugs administered in adequate doses with the aim of achieving sustained seizure freedom" [52].

Cognitive, affective and behavioural disorders are the most common comorbidities in epilepsy [20, 28, 34, 43, 48, 57]. Moreover, the latest studies in the field claim that cognitive deficits are already present at the onset of epilepsy [25, 64]. If in epilepsy with well-controlled seizures, cognitive impairments are more subtle, then in drug-resistant epilepsy, cognitive deficits are observed in about 70-80% of individuals [38, 41, 43]. Appreciation of the relevance of these comorbidities is increasing as they affect the prognosis of epilepsy, social life and quality of life of people with epilepsy.

Epilepsy differs in etiology, genetic determination, severity, chronicity and response to treatment. The relationship between seizures and cognitive dysfunction is complex and can be influenced by age, electroencephalographic abnormalities, onset and duration of illness, seizure type and frequency, which are sometimes even more disabling than epileptic seizures *per se* [56, 61]. Depending on these factors and with ageing, the impact on the course of cognitive development is different. Thus, altered cognitive abilities and performance in people with epilepsy may occur in tandem with the persistence of epileptic seizures, as epilepsy and cognition are strongly interconnected. They become visible together due to a common pathological process or may be in a bidirectional relation [42]. According to recent studies, cognitive impairment often precedes the onset of epileptic seizures [42, 47, 64]. Deficits that are evident at the onset of seizures include decreased memory, decreased attention, slower processing speed, reduced visual-spatial abilities and reduced executive function. Other risk factors that may precipitate or exacerbate cognitive impairment are repetitive brain trauma, status epilepticus episodes, seizures, and elderly age [61]. Most studies show that the earlier the onset of epilepsy, the more cognitive deficits are evident [43].

From another perspective, recent research in epilepsy and neuropsychology highlights that epilepsy-specific cognitive deficits can be characterized into *permanent (chronic) deficits* and *dynamic (transitory) deficits*. Permanent cognitive deficits originate from a wide number of aetiologies in epilepsy, such as trauma, stroke, genetic disorders, mesial sclerosis, status epilepticus, and cortical malformations; therefore, the severity of cognitive deficits is associated with the severity of the etiology. Dynamic cognitive deficits affect individuals with transient epilepsy, may occur because of seizures themselves, interictal epileptiform abnormalities or as an adverse effect of antiepileptic drugs [49].

1.2.1. *The affective dimension, conceptual delimitations*

The concept of affectivity includes the totality of affective states of the individual integrating feelings, emotions and passions. This affective whole constitutes the fundamental part of mental life on which inter-human relationships and all the links that the individual establishes with his environment are built [13]. In this research, we have clinically detailed depressive disorder and anxiety disorder, mentioned as the most common affective disorders in brain trauma and epilepsy [29, 46, 50]. The Diagnostic and Statistical Manual of Mental Disorders (DSM-V) includes depression in the affective disorders section, disorders whose predominant element is a mood disturbance that can range from a transient mood disorder

to a serious mental illness, and is characterized by distinct episodes involving overt changes in affect, cognition and neurovegetative function. The depressive disorder includes symptoms such as the presence of a sad mood, irritability, anhedonia, significant weight loss or weight gain, psychomotor agitation/slowing, fatigue, feelings of worthlessness and guilt, insomnia, diminished ability to think, suicidal ideation, and recurrent thoughts of death accompanied by somatic and cognitive changes that significantly impair the individual's ability to function [1].

From an evolutionary point of view, anxiety is a normal and adaptive emotion because it promotes survival by urging people to move away from dangerous situations. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), anxiety disorders include those disorders that share excessive fear and anxiety and associated behavioural disturbances. Fear is the emotional response to real or perceived imminent danger, whereas anxiety is the anticipation of danger. Obviously, these two states overlap, but they are also different: fear is more frequently associated with rapid increases in vegetative stimulation required in fight-or-flight situations, in immediate danger associated with rescue behaviours, while anxiety is more often associated with muscle tension and alertness required to prepare for expected danger, and with cautious and avoidant behaviour [1].

1.2.2. The affective dimension in epilepsy: summaries and reviews of studies in the field.

About 2000 years ago Hippocrates described the bidirectional relationship between depression and epilepsy by stating that "melancholics usually become epileptics and epileptics - melancholics: it all depends on the direction the illness takes, the discharge in the body leads to epilepsy, and the discharge in the psyche leads to melancholia" [178]. This quotation suggests that melancholia converts into epilepsy and vice versa, based on a vulnerability that determines the predisposition for one condition or the other, depending on its manifestation in the body or in the psyche, while at the same time the development of a comorbidity is not excluded, with melancholic people developing epilepsy and epileptics - melancholia. Hippocrates' theory is still valid today, these observations were confirmed in the longitudinal study conducted by the researcher D. Hesdorffer (2012) who found that epilepsy is associated with increased onset of psychiatric symptoms and suicide even after the diagnosis of epilepsy is established.

The link between epilepsy and affective disorders has been observed for more than 2000 years, the relationship between epileptic seizures and affective disorders has only recently been well understood. These emotions may be constantly present or may occur just before, during or after an epileptic seizure, presenting depressive, anxious or irritable behaviour [28, 45, 46]. Determination of these changes in each individual case is important for differential diagnosis, prognosis of the disease and prescription of appropriate treatment.

Today, despite advances in the understanding and management of drug-resistant epilepsy, the issues surrounding depression remain poorly understood. However, researchers have attempted to classify depressive episodes and symptoms in people with epilepsy temporally: 1) before the onset of the seizure (*pre-ictal*) - manifested by dysphoric states; 2) during the seizure (*ictal*) - manifested by anhedonia, feelings of guilt, suicidal ideation and religious representations; 3) after the seizures (*post-ictal*) - manifested by low frustration tolerance, loss of interest, helplessness, shame, irritability, feelings of self-depreciation, guilt and hopelessness, suicidal thoughts; 4) between seizures (*inter-ictal*) - manifested by major depressive disorder, dysthymic disorder and cyclothymic disorder [34, 57].

Anxiety is the second most common psychiatric comorbidity in epilepsy, although some authors suggest that it is as prevalent as depressive disorder [46, 50, 55]. From a psychosocial perspective, anxiety can develop because of living with a chronic, unpredictable and difficult to treat illness. If we refer to epilepsy, we mention that people with this disease most often verbalize their fear of seizure recurrence, fear of physical trauma and death, loss of relationships, restriction of autonomy, loss of financial income and job. Anxiety is related to epilepsy in several ways, anxiety symptoms can occur as a reaction to the diagnosis of epilepsy, as a symptom of the seizure or even as an adverse effect of some

antiepileptic drugs. Anxiety most commonly begins after the diagnosis of epilepsy or after the first seizure and involves the fear of recurrent seizures. The feeling of isolation or social rejection can influence the exacerbation of anxious symptoms. Individuals with epilepsy may experience psychiatric manifestations related to the epileptic seizure and may also independently manifest psychiatric comorbidities of epileptic seizures. The temporal relationship with anxiety disorder in people with epilepsy can be classified into pre-ictal symptoms (prior to the onset of the epileptic seizure), ictal symptoms (occurring during the seizure), post-ictal symptoms (occurring 12-72 hours after the seizure), and inter-ictal symptoms (occurring between seizures). All these symptoms are characterized by varying degrees of fear, restlessness, extreme agitation, or immobility associated with a look of horror [35, 55].

In conclusion, we can mention that anxiety disorders and depressive disorders are the most common comorbidities in drug-resistant epilepsy, influencing both cognitive functions, the frequency and treatment of seizures, and the quality of life of individuals with epilepsy. In this context, we consider it particularly important to identify anxiety and depression symptoms early and treat them through a combination of psychological interventions and medication.

1.3.1. Behavioural dimension, conceptual delimitations

In psychology, behaviour means the totality of the concrete or mental behavioural manifestations through which people react to their environment and to themselves. As a result, any human psychological process or characteristic is formed and develops only in close connection with activity or within activity.

Taking as a reference the international studies on behavioural manifestations in epilepsy in general and in drug-resistant epilepsy in particular, we highlight the presence of alternating behaviours of aggressiveness, impulsiveness, irritability or on the contrary - passivity, apathy and shyness.

Overall, aggression is any form of behaviour aimed at harming or injuring another person, a multi-determined act that often leads to physical or verbal abuse of self, others or objects. At the same time, aggression can be manifested in a variety of forms that can be expressed physically, verbally or nonverbally, and the types of aggressive reactions involve physical aggression, indirect aggression, irritability, resentment, negativity, suspicion, verbal aggression and guilt [31]. Further, shyness is defined as defensive, anxious, hesitant and asthenic behaviour expressed by difficulties in social adjustment. Shy behaviour can be caused by factors such as melancholic temperament, self-doubt, inferiority complexes and communication difficulties [11]. As a result, there is a need to study these behavioural manifestations in the context of our country and to identify the prevalence of these manifestations in drug-resistant epilepsy.

1.3.2. The behavioural dimension in epilepsy: summaries and reviews of studies in the field.

The relationship between aggression and epilepsy is complex and controversial. To the present, researchers in the field have not yet reached definitive conclusions, given that the incidence and prevalence of aggressive behaviour has not yet been quantified [24]. However, studies in the field of epilepsy have shown that certain behavioural traits may be more common in people with epilepsy compared to the general population. These include emotional lability, irritability, aggressiveness and anger, greater interest in philosophical, moral, and religious issues, excessive writing, a sense of personal destiny and low libido. These traits are not specific to all individuals with epilepsy but are more common among individuals with epilepsy associated with psychiatric comorbidities [35, 43, 51].

Regarding aggressiveness in epilepsy, F. Tudose considers that it is manifested episodically in the form of explosive acts, aggressive behavior marked by wild violence, and as a background attitude that marks most relationships with others [13]. The epilepsy behaviour researcher O. Devinsky (1993) argues that in epilepsy there is an accentuation of alternating emotional states, emotional lability and extreme behaviour [35]. In this context, some authors describe an accentuation or increase in affectivity, while others identify an overall decrease in emotional life. And C. Elger (2004), argues that behavioural

problems in epilepsy need to be analysed through a multifactorial model that must consider seizure type, morphological aspects, interictal epileptic activity, drug treatment, psychiatric comorbidities and individual capacity reserves. Therefore, behavioural problems may be caused by different factors such as: a) epilepsy itself; b) the effect of antiepileptic medication on behaviour; c) structural brain damage or disturbances in the neural circuits responsible for emotions; d) a combination of one or more factors [38].

In Chapter 2 - Cognitive, affective and behavioural features of people with drug-resistant epilepsy: a psychodiagnostics approach - describes the experimental design and presents the research methodology, clinical and demographic characteristics of the subjects. The results of the experimental study on the cognitive, affective, and behavioural characteristics of people with drug-resistant epilepsy are also presented and analysed, and a comparative analysis between people with drug-resistant epilepsy and those with well-controlled epilepsy is performed. At the same time, we highlighted the general features of people with drug-resistant epilepsy according to gender, education level, marital status, living environment, professional status, etiology of epilepsy, duration of illness and frequency of epileptic seizures. An integrated psychological profile of subjects with drug-resistant epilepsy and subjects with well-controlled epilepsy is developed.

2.1. Design of the psycho-diagnostic approach. This chapter of the paper concerns the empirical research through which we identified and analysed the cognitive, affective, and behavioural features of subjects diagnosed with drug-resistant epilepsy. In this regard, we will mention that at this stage of the research the theoretical and instrumental resources of general psychology are exploited by improving the quality of life of the subjects and by solving a broad scientific and applied problem related to the psychological care of patients with serious health problems.

The purpose of this chapter is to establish the cognitive, affective and behavioural features of subjects with drug-resistant epilepsy and those with well-controlled epilepsy and to develop a psychological profile of subjects with drug-resistant epilepsy and those with well-controlled epilepsy.

Based on the purpose proposed in this chapter, the following objectives have been set:

- to identify the cognitive, affective, and behavioural features of subjects with drug-resistant epilepsy and those with well-controlled epilepsy;
- to compare the cognitive, affective, and behavioural features of individuals with drug-resistant epilepsy with those with well-controlled epilepsy;
- to establish a psychological profile of the individual with drug-resistant epilepsy and those with well-controlled epilepsy.

The research steps are as follows:

- 1) to develop the research design;
- 2) to select the psychological tests that allow the study of cognitive, affective and behavioural features of subjects with epilepsy and their application;
- 3) to process the quantitative and qualitative results obtained, and to determine cognitive, affective and behavioural features of subjects with drug-resistant epilepsy and those with well-controlled epilepsy;
- 4) to establish a psychological profile of subjects with drug-resistant epilepsy and those with drug-controlled epilepsy;
- 5) to formulate conclusions in the context of confirming the research hypotheses.

The development of the research approach and its implementation took place during 2019-2022 within the Institute of Emergency Medicine, the National Epileptology Center. Subjects included in the study are people diagnosed with epilepsy aged 18-62 years, selected following the diagnosis of "drug-resistant epilepsy" and "well-controlled epilepsy" by the epileptologist of the National Epileptology Center. The study was conducted on a group of 102 subjects with epilepsy, including 62 subjects with drug-resistant epilepsy and 40 subjects with well-controlled epilepsy. Subjects with dementia and severe cognitive impairment were excluded from the study. The general characteristics of the experimental subjects are reflected in Table 2.1.

Table 2.1. Presentation of general data of experimental subjects

General dates		Drug-resistant		Well-controlled	
		Number	%	Number	%
1. Number	Total subject -102	62	62%	40	38%
2. Gender	Men	30	48%	20	50%
	Women	32	52%	20	50%
3. Age (years)	18-19	2	3%	1	3%
	20-29	18	29%	16	40%
	30-39	23	37%	13	33%
	40-49	15	24%	7	18%
	50-59	2	3%	3	8%
	60-69	2	3%	0	0%
4. Education	Secondary education	29	47%	10	25%
	Professional technical studies	18	29%	6	15%
	Higher education	15	24%	24	60%
5. Professional status	Employed	17	27%	32	80%
	Unemployed	43	69%	6	15%
	Pensioner	1	2%	0	0%
	Student	1	2%	2	5%
6. Marital status	Married	23	37%	14	35%
	Single	29	47%	24	60%
	Divorced	10	16%	2	5%
7. Living environment	Urban	33	53%	21	53%
	Rural	29	47%	19	48%
8. Disease duration (years)	0-9	3	5%	15	38%
	10-19	24	39%	15	38%
	20-29	26	42%	6	15%
	30-39	5	8%	3	8%
	40-49	3	5%	1	3%
	50-59	1	2%	0	0%
9. Etiology of epilepsy	Structural	43	69%	25	63%
	Unknown	13	21%	12	30%
	Genetic	6	10%	3	8%
10. Frequency of seizures	1 – 10/month	43	69%	-	-
	11 – 20/month	5	8%	-	-
	More than 20/month	14	23%	-	-

Psychometric instruments of the experimental research.

In order to achieve the objectives proposed in this research approach, the methodology applied in the research included:

- *empirical methods*: Montreal Cognitive Assessment Test; Rey Auditory Verbal Test; Rey-Osterrieth complex figure; Trail Making Test; F-A-S Phonemic Verbal Fluency Test; Beck Depression Inventory (BDI); Hamilton Anxiety Rating Scale; Buss-Durkee Hostility Inventory and Revised Cheek and Buss Shyness Scale; clinical interview.

- *mathematical and statistical methods* (SPSS Program - 20): analysis of frequencies and percentage values, comparison of means by descriptive statistics, determination of Pearson correlation coefficients, difference of means by independent T-test and T-test/retest to calculate differences between group means before and after intervention, and ANOVA analysis of variance.

2.2. Presentation, analysis and interpretation of results

I. Cognitive dimension. The results of the MoCA test allow us to distinguish two categories of subjects: with cognitive impairment and without cognitive impairment. The quantitative analysis and

comparative results shown in Figure 2.1, allow us to see that cognitive impairment is present in 20% of subjects with well-controlled epilepsy and in 61% of subjects with drug-resistant epilepsy (Figure 2.1). According to the results of this test (MoCA), subjects with drug-resistant epilepsy ($m=23.40$ $ab.st=4.01$) scored 3.28 units lower than subjects with well-controlled epilepsy ($m=26.68$ $ab.st=2.35$). By applying *t-test* it was identified that this difference is statistically significant and cognitive screening values are higher in subjects with well-controlled epilepsy. This denotes that *hypothesis 1* regarding cognitive functioning in our research is confirmed, subjects with drug-resistant epilepsy show more cognitive impairment compared to subjects with well-controlled epilepsy.

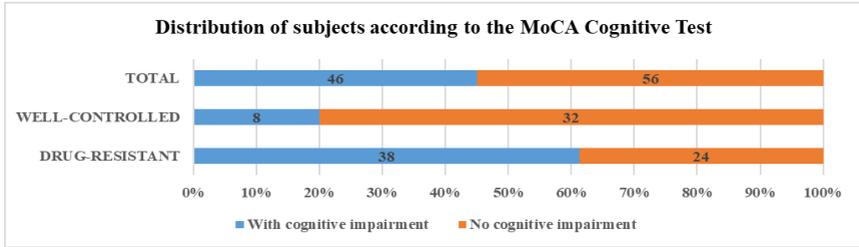


Figure 2.1. Subject distribution according to the MoCA Cognitive Test

The research results showed statistically significant differences in the following cognitive processes: verbal memory ($t=-2.14$ $p=0.035$), visual memory ($t=-4.6$ $p=0.00$), semantic fluency ($t=-2.87$ $p=0.005$), attention ($t=-2.4$ $p=0.015$) and insignificant differences in phonemic fluency ($t=-0.64$ $p=0.5$). Cognitive impairments more prominent in subjects with drug-resistant epilepsy aged 50-59 years, female, with secondary education, not employed, single, with epilepsy of unknown etiology and structural. At the same time, 79% of subjects with drug-resistant epilepsy with cognitive impairment have more than 20 epileptic seizures per month. Cognitive impairment is present in most people with drug-resistant epilepsy in the early period of the disease (0-9 years). No significant differences by gender and living environment were found.

II. Affective Dimension. From the analysis of the data presented, we find that depression is present in 44 of the total subjects (43%), of which 23% (9 subjects) in subjects with well-controlled epilepsy and 56% (35 subjects) in those with drug-resistant epilepsy. The results are shown in Figure 2.2.

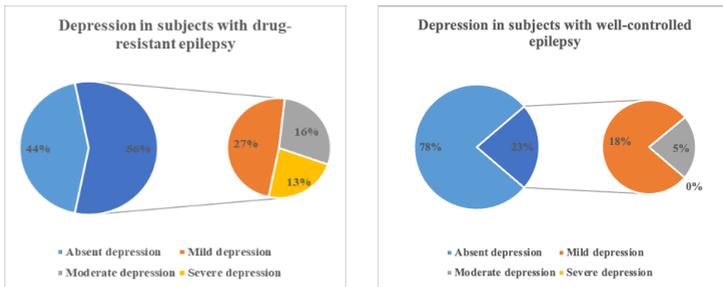


Figure 2.2. Distribution of depression scores in subjects with drug-resistant epilepsy and those with well-controlled epilepsy

According to the research results, anxiety is present in 45 subjects with epilepsy (44%), of which 33 are subjects with drug-resistant epilepsy (53%) and only 12 subjects (30%) with drug-controlled epilepsy. The results are reflected in Figure 2.3.

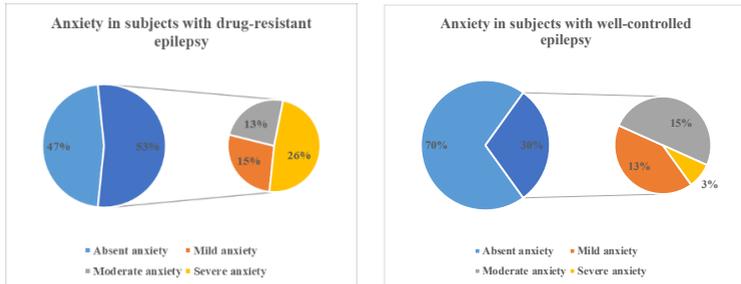


Figure 2.3. Distribution of anxiety scores in subjects with drug-resistant epilepsy and those with well-controlled epilepsy

Statistical results on the affective dimension reveal significant differences in the manifestation of depression ($t=3.50$ and $p=0.001$) and anxiety ($t=3.09$ and $p=0.003$) in subjects with drug-resistant epilepsy compared to those with well-controlled epilepsy. At the same time, no significant gender differences were found, but we find that women with drug-resistant epilepsy are 3.3 times more depressed and 2.6 times more anxious compared to women with well-controlled epilepsy. Divorced, non-employed, professionally technically educated subjects with epilepsy of unknown aetiology are most affected by depression and anxiety, while subjects with higher education and those employed are more protected from suffering from anxiety and depression. As the disease progresses over time and the number of epileptic seizures increases, so does the level of depression and anxiety.

III. Behavioural dimension. Statistical data on the behavioural dimension confirmed statistically significant differences in the manifestation of aggression ($t=2.6$ $p=0.012$), hostility ($t=7.3$ $p=0.01$) and shyness ($t=3.04$ $p=0.003$) in subjects with drug-resistant epilepsy compared to subjects with well-controlled epilepsy. Behavioral factors such as indirect aggression ($p=0.00$), nervousness ($p=0.005$), grief ($p=0.00$), distrust ($p=0.00$), guilt ($p=0.001$) was found to be significantly more prominent in subjects with drug-resistant epilepsy compared to subjects with well-controlled epilepsy. At the same time, in the case of physical aggression ($p=0.09$), negativism ($p=0.06$) and verbal aggression ($p=0.13$), their manifestations are not significantly more differentiated. At the same time, high aggression was found only in subjects with drug-resistant epilepsy (3%) and exclusively in women with drug-resistant epilepsy, while high hostility was found predominantly in subjects with drug-resistant epilepsy (61%) and insignificantly in subjects with well-controlled epilepsy (10%). At the same time, we can state that the high index of hostility and aggression was confirmed in subjects with drug-resistant epilepsy with secondary education, unemployed, from rural areas, divorced, with structural epilepsy, with a high frequency of epileptic seizures; also, hostile and aggressive behavior was found to increase with increasing frequency of epileptic seizures and duration of the disease. High shyness was predominantly found in subjects with drug-resistant epilepsy (15%), the high index of shyness was evident in drug-resistant subjects with professionally technical studies, unemployed, with unknown epilepsy, with a high frequency of epileptic seizures and with a long duration of the disease (30- 39 years). There are no significant differences according to gender, living environment and marital status.

2.3. The psychological profile of the person with drug-resistant epilepsy

Following the presented results in section 2.2, we developed an integrated psychological profile of the person with drug-resistant epilepsy and an integrated profile of the person with well-controlled epilepsy. These profiles allow a clarity and a complex understanding of the cognitive, affective and behavioral dimensions of the person with drug-resistant epilepsy and the one with well-controlled epilepsy and, at the same time, highlight the most relevant general characteristics from the perspective of gender, age, level of education, professional status, marital status, living environment, etiology of epilepsy, duration of epilepsy and frequency of epileptic seizures (figures 2.4 and 2.5).

Further, we present the *psychological profile of the person with drug-resistant epilepsy*:

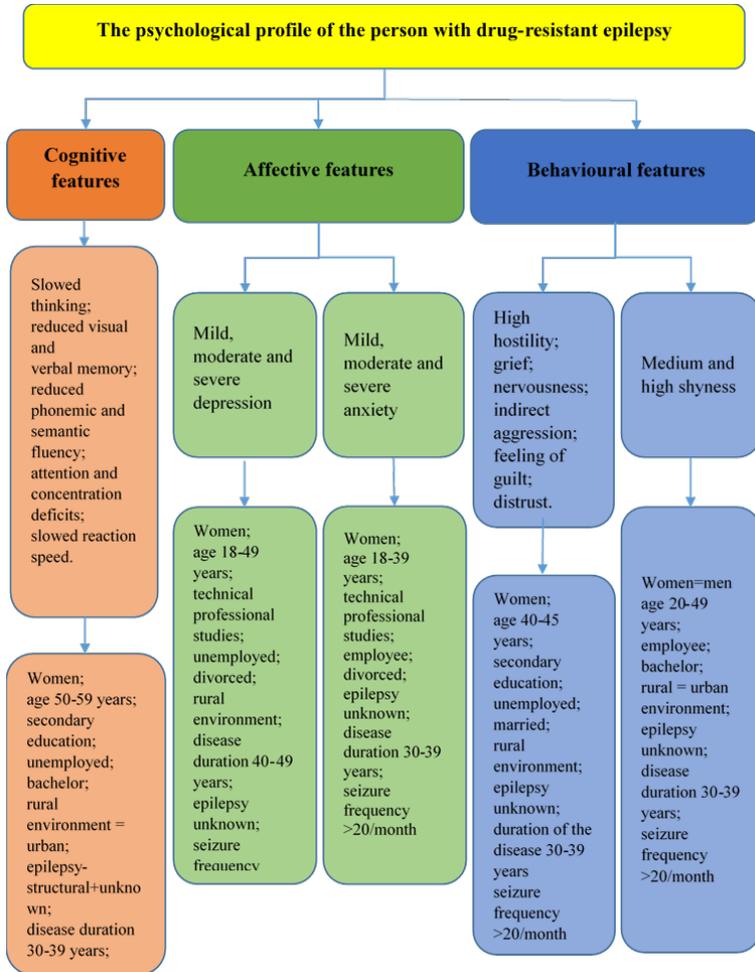


Figure 2.4. The psychological profile of the person with drug-resistant epilepsy

Analyzing the psychological profile of the person with drug-resistant epilepsy (figure 2.4) we can emphasize the following characteristics: 1) cognitive disorders expressed by slowed thinking, decreased verbal and visual memory, difficulty identifying words, reduced attention, ability to concentrate and reaction speed; 2) affective disorders manifested by mild, moderate and severe anxious-depressive symptoms; 3) behavioural changes evidenced by hostility, nervousness, indirect aggression, contempt, mistrust, guilt and shyness. At the same time, we find that the more deficient the cognitive processes, the higher the level of depression, anxiety, aggression, hostility and shyness.

Further, we present the *psychological profile of the person with well-controlled epilepsy*:

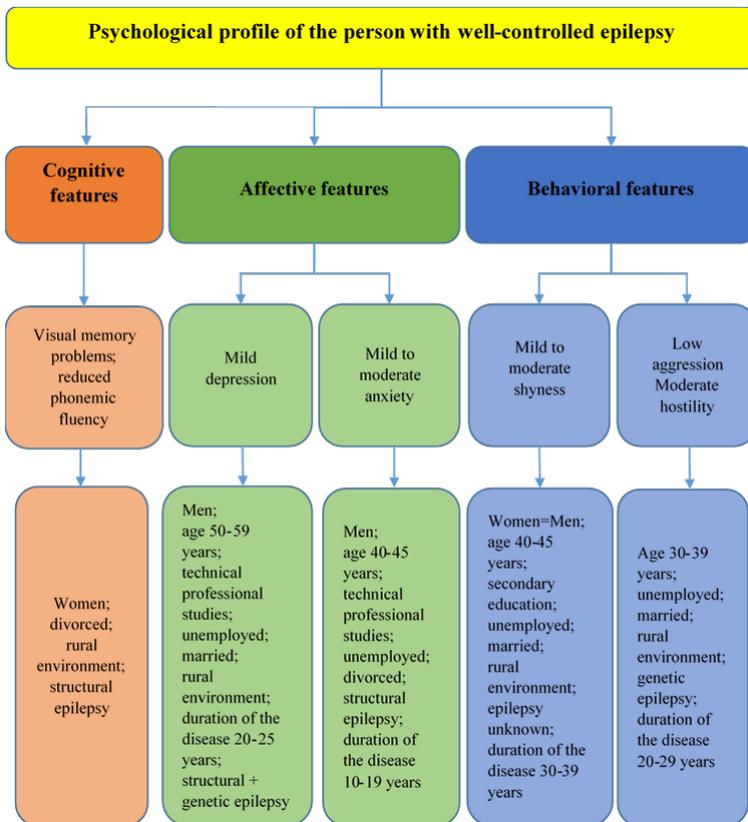


Figure 2.5. The psychological profile of the person with well-controlled epilepsy

Analyzing the psychological profile of the person with well-controlled epilepsy, we can note that it is characterized by cognitive impairment like the subject with drug-resistant epilepsy, only that the degree of impairment of these processes is low. Therefore, it is found that the cognitive dimension is manifested by the following characteristics: 1) low visual memory and reduced verbal fluency; 2) affective disorders manifested by mild depressive symptoms and slightly moderate anxious symptoms; 3) behavioural changes manifested by low aggression, normal hostility, slightly moderate shyness. At the

same time, we find that the more developed the cognitive field, the lower the level of shyness, anxiety, depression and aggression.

□ *Correlations regarding cognitive, affective and behavioral characteristics in subjects with drug-resistant epilepsy.* Following the results obtained for the correlation coefficients for subjects with drug-resistant epilepsy, we can conclude that the cognitive dimension manifested by visual memory, verbal memory, semantic and phonemic fluency, visual-constructive skills, attention, mental flexibility, and reaction speed are in indirect correlation significant with the affective dimension (depression and anxiety) and with the behavioral dimension (aggression, hostility, and shyness). Therefore, we find that the more developed the cognitive domain, the lower the level of shyness, anxiety, depression and aggression. It is also found that the higher the level of anxiety and depression, the higher the level of shyness, aggression and hostility in subjects with drug-resistant epilepsy. At the same time, the high level of depression and anxiety is inversely proportional to the cognitive domain, especially visual-constructive skills, attention and reaction speed. At the same time, it is found that aggressiveness, hostility and mainly shyness is more pronounced in subjects with pronounced cognitive disorders.

□ *Correlations regarding cognitive, affective and behavioral characteristics in subjects with well-controlled epilepsy.* Following the results obtained for the correlation coefficients for subjects with well-controlled epilepsy, we can conclude that the cognitive dimension presented by visual memory, verbal memory and phonemic fluency are in indirect correlation with the affective dimension (depression and anxiety) and with the behavioral dimension (aggression, hostility, and shyness). Therefore, we find that the more developed the cognitive domain, the lower the level of shyness, anxiety, depression and aggression. At the same time, it is found that shyness is more pronounced in subjects with drug-controlled epilepsy with cognitive disorders, and aggression and hostility are not significant.

□ *Correlations regarding cognitive, affective and behavioral characteristics in subjects with epilepsy in terms of disease duration and seizure frequency.* The results regarding the implications of the dimensions investigated in this paper allow us to state that the most significant correlations were recorded between the duration of the condition and the frequency of epileptic seizures that affect verbal and visual memory, attention, mental flexibility and reaction speed. The highest correlation is found between depression ($r=0.27$ $p= 0.006$) and anxiety ($r=0.078$ $p= 0.001$), these being directly influenced by the frequency of epileptic seizures ($r=0.27$ $p= 0.006$) and shyness ($r=0.41$ $p=0.001$). Therefore, we can say that the higher the frequency of seizures and shyness, the higher the indicators of depression and anxiety will be. In behavioral terms, we attest that the longer the duration of the illness and the higher the frequency of crises, the higher the hostility ($r=0.28$ $p= 0.005$), the level of obedience ($r=0.27$ $p= 0.005$) and the feeling of guilt ($r=0.30$ $p=0.003$). At the same time, there is a directly proportional correlation between the duration of the condition and the frequency of seizures ($r=0.37$ $p=0.001$), this implies that the longer the duration of the condition increases, the more the frequency of seizures increases. Thus, we conclude that the longer the duration of epilepsy and the frequency of epileptic seizures, the more pronounced the cognitive deficit, depression, anxiety, hostility and shyness. Thus, the assumption from *hypothesis 2* that there is a relationship between the duration of the epileptic condition and the frequency of epileptic seizures and the quality of the cognitive, affective, and behavioural processes of people with epilepsy was confirmed.

In chapter 3 - Psychological intervention program aimed at improving the cognitive, affective and behavioral processes of people with drug-resistant epilepsy is presented the psychological interventions and strategies used in epilepsy, the psychological intervention program designed to improve the cognitive, affective and behavioral processes of people with drug-resistant epilepsy, the evaluation of the effectiveness of the intervention program, and the results and limits of the intervention program.

3.1. Psychological interventions in the assistance of people diagnosed with epilepsy.

Psychological therapies have been designed to address the seizures themselves and the psychological problems associated with epilepsy. Cognitive, affective and behavioral changes in drug-resistant epilepsy determine specific ways of psychological intervention. From the very beginning of the disease, the diagnosis of epilepsy produces suffering, anguish, social isolation, fear of stigmatization, anxious-depressive states, low self-esteem and feeling of loss of control over one's life because of loss of independence, job and of financial income. This new reality initially produces shock, anger, stress and denial associated with guilt and self-blame.

Despite advances in drug treatments in epilepsy, approximately 30% of people with epilepsy suffer from drug-resistant seizures [52]. In this context, psychological support is very important for these people, because the high frequency of epileptic seizures and the long duration of the disease cause a progressive decrease in cognitive function, accentuate emotional states, and cause specific behavioral changes.

Psychological therapies that are successful in epilepsy are: supportive counselling, psychoeducation, psychoanalytic psychotherapy, cognitive-behavioral therapy, art therapy, music therapy, group psychotherapy, relaxation therapy or autogenic training, biofeedback therapy, clinical hypnosis, integrative psychotherapy, animal-assisted therapy, and mindfulness-based cognitive therapy (MBT) [27, 36, 63].

Considering the techniques and methods used worldwide in epilepsy, we note that in our psychological intervention program we have worked in an eclectic manner, taking elements from psychoanalytic psychotherapy, cognitive-behavioral therapy, family therapy, art and music therapy, counselling support and psychoeducation – all these techniques have been adapted to the needs of people with drug-resistant epilepsy.

3.2. Psychological intervention program in drug-resistant epilepsy

Development of the psychological intervention program in drug-resistant epilepsy. Psychological treatments in drug-resistant epilepsy involve complex interventions that include cognitive, affective and behavioral dimensions. One task of our research consisted in determining strategies for working with people with drug-resistant epilepsy and developing a psychological intervention program for this specific group of people.

The purpose of the psychological intervention program is to develop and implement a psychological intervention program intended for people with drug-resistant epilepsy for: a) rehabilitation of the cognitive dimension, b) improvement of the affective dimension and c) modification of the behavioral dimension. In a broader sense, this program was designed to increase self-confidence, improve social skills, increase adaptation to the diagnosis of epilepsy, increase compliance with antiepileptic treatment, adapt the professional field and create a new lifestyle that will contribute to increasing the quality of life.

Objectives of the intervention program. Considering the information presented, we propose a psychological intervention program indicated for people with drug-resistant epilepsy for the development and rehabilitation of cognitive skills, for the reduction of mental suffering and acceptance of the disease, as well as for the improvement of the affective state and the modification of behavior.

The content of the psychological intervention program targeted the following dimensions and objectives:

Cognitive domain:

- implementing compensatory strategies to improve memory, language, attention and concentration;
- integration of knowledge about epilepsy, epileptic seizures, etiology, course of the disease, treatment, comorbid conditions, as well as about brain functioning in general;

Affective domain:

- reducing mental suffering, especially depressive and anxious symptoms, and promoting the well-being of the person with epileptic seizures;
- increasing the understanding of one's own functioning and decreasing the anxiety related to the disease;

Behavioural domain:

- identification of sources, antecedents and behavioral consequences (trigger factors of hostile and timid behavior) to prevent and change behavioral consequences;
- awareness and recognition of behavioral manifestations;
- influencing the frequency of seizures and avoiding the triggering factors of epileptic seizures;
- increasing openness to society, strengthening social skills and communication skills;

The subjects of the program. Six subjects diagnosed with drug-resistant epilepsy were selected, patients of the National Epileptology Center, Institute of Emergency Medicine.

Stages in the development and implementation of the intervention program. Depending on the psychological profile of each participant in the program, the strengths and weaknesses of each one, we established with each one an individualized working framework focused on the primary needs of each subject. At the same time, in all cases the general purpose and objectives of the intervention program were considered.

The sessions took place between September and November 2021 (in the psychologist's office within the CNE). The psychological intervention program included 10 individual psychological counselling sessions of 60 min each, with a frequency of 2 sessions per week.

The strategies of the psychological intervention program included a system of exercises and techniques organized in well-determined complex sessions, aimed at improving the cognitive, affective and behavioral processes of people with drug-resistant epilepsy (table 3.1).

Table 3.1. Strategies and techniques used in the psychological intervention program.

Nr.	Strategies	Techniques
1.	<i>Improving cognitive processes</i>	For memory (visual image tasks "go home on a different road", "viewing pictures" method, logical memory - "associative pairs" (10 words); auditory tasks - listening to an audio book; practicing and repeating the "organization list" , completing the diary with notes or in the calendar, "brushes teeth with the non-dominant hand"); for thinking (logic games, "similarities", "comparisons", making meaningful words from a string of letters, number strings); for language (reading to expand vocabulary, reading aloud, crossword games, crossword puzzle, using indirect language "talking around the word"); for attention (repetitive exercises for detecting targets in the presence of distractions, sorting words in alphabetical order, underlining the letters M and F in a newspaper, arranging numbers in ascending order, sudoku, puzzles, card games, "find the differences"); SWOT technique (S - strengths; W - weaknesses; O - opportunities; T - threats).
2.	<i>Awareness and expression of emotions.</i>	Self-assessment of psycho-emotional states (anxiety, sadness, joy, calm, emotional comfort/discomfort), the exercises "I feel...", "constructing the message in the first person", "Ask for help", "Releasing old programming", "The 9 facts about me", art therapy technique "draw the epileptic fit", "Johari window", helping the person to move from a

		psychology in which everything is black or white, all or nothing, to one in which various good aspects and a range of emotions consolidated into a complete identity, the technique of psychoanalytic origin "interpretation <i>here and now</i> ", the techniques of exploration and clarification aimed at strengthening the "I" of the person with epilepsy, the technique recommended for people in states of heightened emotionality " <i>beat the iron when is cold</i> ", in other words, we can comment on what happened in the state of anger or despair only after the state has passed and the person has recovered from that intensity of emotions.
3.	<i>Cognitive restructuring.</i>	The technique of the Socratic method, the technique of checking hypotheses, the identification of cognitive distortions, the self-recording sheet of automatic thoughts, the technique of changing unrealistic negative thoughts and attitudes that cause hostility and shyness.
4.	<i>Problem solving training</i>	The "brainstorming" technique, "reality test", "true and false".
5	<i>The development of nonverbal behaviours.</i>	Exercises to improve posture, mimicry, voice, gestures; relaxation techniques; meditation and breathing techniques with the aim of removing tension, muscular and emotional tension; acquiring and learning positive behavior patterns; music therapy "listening to the Sonata in Re major by Mozart".
6.	<i>Training for learning assertive behavior.</i>	Exercises for expressing feelings, opposing opinions, exercises for addressing/accepting criticism, exercises for addressing/receiving compliments, positive questioning technique, negative questioning technique, "informing about oneself", "informing about the other", 'know yourself', 'the person's self-image', the technique of diminishing old behaviours and integrating new, adaptive behaviours, emotional expression techniques (e.g. emotionally charged conversation, the technique of giving affection, assertive training), communication techniques and development of independent, active, confident and courageous behavior, as well as techniques for reducing inhibitions.
7.	<i>Psychoeducation.</i>	Establishing and completing an agenda that includes thoughts, lifestyle, epileptic seizures, antiepileptic medication, and various exercises for the listed components: what is epilepsy? what is an epileptic seizure? types of seizures, what is the first aid in an epileptic seizure? what are the risks of epilepsy? how does the brain work? about ...?"), "the necessities of age", "knowledge" and "self-knowledge" exercises, "me now, me in the past, me in the future", "the tree of values".

3.3. Evaluation of the effectiveness of the psychological intervention program in drug-resistant epilepsy

To evaluate the effectiveness of the psychological intervention program, the six subjects with drug-resistant epilepsy who benefited from the intervention program were retested. To verify the effectiveness of the psychological support program, psychodiagnostics tests were applied within the diagnostic approach: Montreal Cognitive Assessment Test; Rey Auditory Verbal Test; Rey-Osterrieth complex figure; Trail Making Test; F-A-S Phonemic Verbal Fluency Test; Beck Depression Inventory

(BDI); Hamilton Anxiety Rating Scale; Buss-Durkee Hostility Inventory and Revised Cheek and Buss Shyness Scale;

In order to highlight the differences recorded by the subjects involved in the formative experiment, at the first stage, we compared the results obtained immediately after the implementation of the psychological intervention program, processing the data with the help of statistical methods, using the *t-test*, the test-retest method.

The cognitive dimension. As a result of the application of the intervention program and the administration of the MoCA cognitive test, the results demonstrated that the cognitive disorders in the experimental sample of subjects are lower (26.2) than those obtained at the initial stage (25.3). We obtained an average value of over 26 points, which signifies the absence of cognitive disorders after applying the program to the subjects (figure 3.1 and table 3.2):

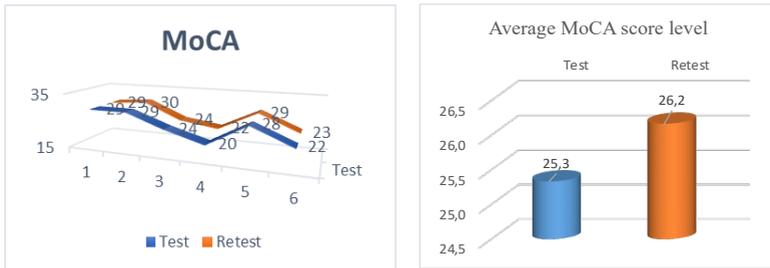


Figure 3.1. Comparative analysis of results and means according to the MoCA test.

As a result of applying the *t-test* for test/retest, it is noted that the correlation value is 0.98, being a positive correlation between the initial and post-intervention values, which indicates that they are proportional. At the same time, it was found that the difference in the initially identified cognitive disorders has a significant importance compared to the result after the intervention $p \leq 0.05$ (table 3.2). Thus, we conclude that the value of cognitive disorders in the subjects of the experimental group was reduced by the intervention program used.

Table 3.2. Presentation of statistical data at the test/retest stage regarding the cognitive dimension

	Average scores		The difference in mean scores	Correlation value	Significance	<i>t test</i> Value	<i>p</i> Value
	test	retest					
Cognitive test MoCA	25,3	26,2	-0,9	0,98	0,000	-2,7	0,04
Visual memory							
Rey figure - Copy	92,5	92,5	0				
Rey figure - Recall	22,5	26,7	-4,2	0,95	0,003	-1,5	0,18
Attention (TMT)							
TMT - part A	23,3	31,6	-8,3	0,93	0,006	-2,7	0,04
TMT - part B	16,6	18,3	-1,7	0,94	0,005	-1,0	0,36
Language (FAS)							
Semantic fluency	16,7	23,3	-6,6	0,63	0,17	-1,00	0,36
Phonemic fluency	15,0	20,0	-5	0,75	0,08	-2,23	0,07
Verbal memory (RAVLT)							
Trial 1	5,8	6,0	-0,2	0,86	0,02	-0,542	0,611
Trial 2	8,3	8,1	0,2	0,96	0,002	0,542	0,611

Trial 3	9,6	9,8	-0,2	0,91	0,01	-0,349	0,741
Trial 4	9,6	11,0	-1,4	0,85	0,03	-2,000	0,102
Trial 5	9,3	11,3	-2	0,82	0,04	-2,449	0,058
Trial (6)	5,3	4,0	1,3	-0,30	0,55	1,019	0,355
Proactive interference (B)	7,6	8,1	-0,5	0,96	0,002	-1,168	0,296
Retroactive interference (7)	8,6	8,8	-0,2	0,99	0,000	-1,000	0,363
Delayed recall (8)	10,3	10,5	-0,2	0,99	0,000	-1,000	0,363
Total acquisition 1-5	42,8	46,3	-3,5	0,92	0,008	-1,962	0,107

With reference to specific cognitive processes: verbal memory ($p=0.10$), visual memory ($p=0.18$), semantic ($p=0.36$) and phonemic fluency ($p=0.07$) and executive function ($p=0.36$), we note that there were improvements after the intervention program, but they are insignificant (table 3.2).

The affective dimension. The mean values of depression and anxiety in the experimental sample of subjects after the application of the intervention program are lower than those obtained at the initial stage (figure 3.2).

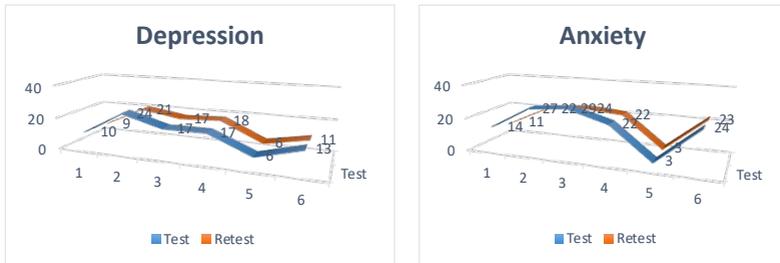


Figure 3.2. Comparative analysis of results according to the Beck Inventory and the Ham-A Scale

After applying the t test, it is noted that the correlation value in the case of depression is 0.97, and in the case of anxiety it is 0.98, being a positive correlation between the initial values and those after the intervention, which indicates that they are proportional. According to the statistical data, it was found that the level of depression and anxiety after applying the intervention program is significant compared to the initial $p \leq 0.05$. Accordingly, we can conclude that through the intervention program the level of the depression and anxiety have been reduced (table 3.3).

Table 3.3. Presentation of statistical data at the test/retest stage regarding the affective dimension

Affective test	Average scores		The difference in mean scores	Correlation value	Significance	t test value	P value
	test	retest					
Beck Depression Inventory	14,5	13,6	0,9	0,97	0,001	2,2	0,01
Hamilton Anxiety Rating Scale	19,8	17,5	2,3	0,98	0,001	2,4	0,05

The behavioral dimension. It is noted that aggression, hostility and shyness after the intervention are lower compared to the initial values. After the manifestation of the level before and after

the intervention in the case of aggression there is no difference, and the manifestation of the level of hostility and shyness being appreciated as decreasing (figure 3.4).

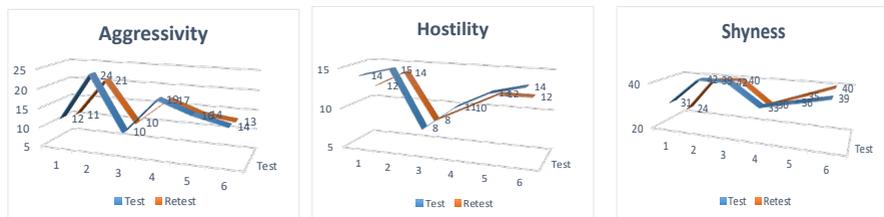


Figure 3.2. Comparative analysis of results according to the Buss-Durkee Hostility Inventory and Revised Cheek and Buss Shyness Scale;

Table 3.4 notes that for both aggression and hostility the correlation is 0.99 and 0.97 respectively, being a positive correlation between baseline and post-intervention values, indicating that they are proportional. Thus, it was found that the mean level of initial aggression and hostility differed significantly from the mean level after the intervention $p \leq 0.05$. At the same time, the correlation value in the case of shyness is 0.94, being a positive correlation between the initial values and those after the intervention, however, the mean of the initial shyness level does not differ significantly from the mean of the level after the intervention $p \geq 0.05$ (table 3.4).

Table 3.4. Presentation of statistical data at the test/retest stage regarding the behavioral dimension

Behavioural tests	Average scores		The difference in mean scores	Correlation value	Signification	t test value	p value
	test	retest					
Aggressivity	15,83	14,3	1,53	0,997	0,000	3,5	0,017
Hostility	12,5	11,3	1,2	0,973	0,001	3,8	0,013
Shyness	37,16	34,7	2,46	0,94	0,005	2,3	0,07

Generalizing the obtained results, we find that following the application of the intervention program, significant changes have occurred on general improvement of cognitive domain; on an affective level by decreasing the level of depression and anxiety and on a behavioral level by decreasing the level of aggression and hostility. With reference to specific cognitive processes (verbal memory, visual memory, semantic and phonemic fluency, attention and executive function) there were improvements after the intervention program, but these are insignificant. At the same time, the level of shyness did not improve significantly either.

GENERAL CONCLUSIONS AND RECOMMENDATIONS

The subject of drug-resistant epilepsy brings into the professional and psychosocial space important topics related to the care and treatment of the person, the dynamics of his psychological functioning and social adaptation. Drug resistance of the person with epilepsy is a stressful phenomenon for the patient and his family. In a professional aspect, the medical institution as the first care space for the subject with drug-resistant epilepsy requests the psychologist's intervention. International studies representing different academic areas unanimously reveal that psychological intervention at the level of

psychodiagnosis and psychological counselling is an important resource in the process of assisting the subject with drug-resistant epilepsy. In this sense, the identification and analysis of the cognitive, affective, and behavioral features of the subject with drug-resistant epilepsy are part of this multidisciplinary assistance.

Thus, in accordance with the theme, purpose and hypotheses of the scientific research, we can submit the following general conclusions:

1. The research results reveal cognitive, affective, and behavioral specific features of the subjects with drug-resistant epilepsy. In the case of our research, these specific cognitive-affective-behavioural features of the person with drug-resistant epilepsy were delimited by comparing subjects with drug-resistant epilepsy with subjects with well-controlled epilepsy.

2. According to our research, we identified the following features of subjects with drug-resistant epilepsy:

- *On the cognitive dimension*, significant values were found for slowed thinking, decreased verbal and visual memory, difficulties in identifying words, reduced attention, concentration problems and slowed reaction speed.

- *On the affective dimension*, relevant values were attested for "mild depression", "moderate depression" and "severe depression" and "mild anxiety", "moderate anxiety" and "severe anxiety".

- *On the behavioral dimension*, significant values were attested for high hostility, indirect aggression, nervousness, contempt, distrust, feelings of guilt and shyness.

3. The comparison of subjects with drug-resistant epilepsy and subjects with well-controlled epilepsy allowed us to define the cognitive, affective, and behavioural particularities specific to subjects with drug-resistant epilepsy. Thus, we found that subjects with drug-resistant epilepsy show significantly lower values for the variables verbal memory, visual memory, semantic fluency and attention and significantly higher values for the variables depression, anxiety, aggression, hostility, and shyness compared to subjects with well-controlled epilepsy.

4. The results of the research allowed us to differentiate the cognitive, affective, and behavioural features according to the following factors: gender, age, educational and professional status, living environment, etiology and duration of the disease and frequency of epileptic seizures. Thus, we established that the duration of the epileptic condition and the frequency of epileptic seizures affect cognitive processes and accentuate the affective-behavioral state of people with drug-resistant epilepsy. Therefore, drug-resistant epilepsy of structural etiology mostly affects the cognitive and behavioral domain, and unknown epilepsy preferentially affects the affective domain. The people most burdened by cognitive and affective problems are those who are unemployed, divorced and single. Affective disorders are more pronounced in women, while the cognitive disorders in drug-resistant epilepsy are present in both genders. Also, people with drug-resistant epilepsy with higher education suffer less from depression and anxiety but are more aggressive. At the same time, it was established that the longer the duration of epilepsy and the higher the frequency of seizures, the more pronounced the cognitive deficit, the more pronounced the affective disorders (depression and anxiety), and the more noticeable shy, hostile, and aggressive behaviour.

5. The data obtained as part of the psychodiagnostics approach allowed us to outline a profile of the person with drug-resistant epilepsy, which is characterized by the following features: cognitive disorders expressed by slowed thinking, decreased verbal and visual memory, difficulties in identifying words, reduced attention, concentration problems and slowed reaction speed; affective disturbances manifested by major and moderate anxiety-depressive disorders and behavioral changes evidenced by hostility, resentment, feelings of guilt and shyness.

6. The results of the psychological intervention program confirmed the global improvement of cognitive function, the improvement of affective states and the modification of the behavior of the

person with drug-resistant epilepsy. The people involved in the program developed skills that increased awareness of comorbidities associated with epilepsy, identified and learned to avoid seizure triggers, increased adaptation to physical and mental changes, and became aware of the effects of drug treatment on memory, attention, emotions and behavior. At the same time, this intervention program has contributed to increased emotional stability, increased compliance with drug treatment, increased trust in medical specialists, increased self-confidence and openness to society, and the creation of a new lifestyle that will increase involvement in the rehabilitation process and contribute to increasing the quality of life of the person with drug-resistant epilepsy.

7. In the context of what was stated in this research, we can affirm that the research results confirmed the research hypotheses, validated its scientific novelty, the theoretical and applied value of the research.

Practical recommendations

The impact of epilepsy extends far beyond the direct effects of seizures and includes a range of medical, psychological, social, educational, personal and economic challenges that can lead to disability and significantly reduced quality of life. In this research we tried to analyze the psychological difficulties faced by people affected by epilepsy, thereby contributing to the improvement of knowledge, prevention and treatment of this condition. We also believe that a multidisciplinary team consisting of doctors, nurses, clinical psychologists, psychotherapists and social workers is necessary to ensure the treatment process of drug-resistant epilepsy. In order to improve the quality of life of people with epilepsy, we come up with the following practical recommendations:

For psychologists:

1. The research results can be implemented both in the professional activity of clinical psychologists and psychotherapists who work with this category of people, as well as psychologists who work with their relatives.
2. Implementation of the psychological assessment procedure of the person with drug-resistant epilepsy using the battery of psychological tests for the psychodiagnosis of the cognitive, affective and behavioral dimensions validated in this research, as a result of collaboration projects with public medical and sanitary institutions and the Institute of Emergency Medicine.
3. Early identification of cognitive, affective and behavioral disorders in people with epilepsy and providing the necessary psychological support in the primary phase of the disease, which will contribute to the prevention of severe disorders and stigmatization.
4. The use of the psychological intervention program in the professional activity of psychologists within the institutions, departments, medical departments with a neurological or psychiatric profile and community mental health centres in the regions of the country that work with this category of people.

For didactic specialists working in the university institutions

1. The results of the research can be used in the didactic activity of university courses, in the development and implementation of guides, essential didactic materials in the training of psychologists.
2. The research results can be used in the process of continuous professional training for family doctors, neurologists, epileptologists, psychiatrists, neurosurgeons, resident neurologists, medical psychologists, psycho pedagogues and psychotherapists.
3. Research results and psychodiagnosics tests applied in research can be used in the training process of specialists in the fields of psychology, medicine and psychoeducation.

For didactic specialists working in the health system and in the epileptology service

1. Inclusion of the results related to the cognitive, affective and behavioral characteristics of subjects with drug-resistant epilepsy in the study programs, in the training courses of neurologists, neuropsychiatric, family doctors.
2. Promotion of the psychological evaluation service in epilepsy with the aim of optimizing the diagnostic and therapeutic, adequate, and early evaluation of people with drug-resistant epilepsy, to obtain a better control of epileptic seizures and to improve the quality of life of the beneficiaries.

For people with epilepsy

1. Assessment of cognitive, affective and behavioral functions at the onset of epilepsy and in dynamics, once a year, to determine cognitive, affective and behavioral changes and compare them over time.
2. Completing the agenda of epileptic seizures in order to identify the provoking and triggering factors of epileptic seizures.
3. Participation in group psychological sessions with other epilepsy patients.
4. Creation of the "Association of the patients with epilepsy ", an organization focused on promoting and defending the rights of people with epilepsy. Members of the association can be people with epilepsy, their family members, their caregivers, specialized medical staff interested in this field.

For the family of the person with epilepsy

1. Avoidance of dysfunctional attitudes and behaviours, such as overprotection and rejection.
2. Involvement of family members in psychoeducational activities through information from reliable sources about epilepsy, epileptic seizures, the factors that trigger epileptic seizures, the etiology of seizures, the course of the disease, antiepileptic treatment, comorbid disorders. Helping the person with epilepsy complete their seizure diary to adhere to health care advice and avoid triggering seizures.
3. Participation in group psychological sessions with other family members of people with epilepsy.

BIBLIOGRAPHY

1. American Psychiatric Association, *Manualul de Diagnostic și Clasificare Statistică a Tulburărilor Mintale*, Ediția a 5-a (DSM-V), București, Editura Medicală Callisto, 2016. ISBN: 978-606-8043-14-2. p. 155.
2. BOTEZ, Mihai.I., *Neuropsihologie clinică și neurologia comportamentului*. București: Editura Medicală, 1996. p.253.
3. CARAUȘ, Ghenadie. *Particularitățile clinice ale stărilor psihotice în epilepsie*. Buletinul Academiei de Științe a Moldovei. Științe Medicale, 2012, 36.4: 154-156.
4. GASNAȘ, Catereniuc Daniela; CHELBAN, Viorica; GROPPA, Stanislav. *Aplicabilitatea testării genetice de nouă generație în epilepsie prin prisma secvențierii întregului exom*. In: Congresul consacrat aniversării a 75-a de la fondarea Universității de Stat de Medicină și Farmacie „Nicolae Testemițanu”. 2020. p. 332-332.
5. COBÎLEANSCHI, Oleg, et al. *Recuperarea pacienților cu epilepsie*. Buletinul Academiei de Științe a Moldovei. Științe Medicale, 2022, 73.2: 169-173.
6. CONDRATIUC, Elena. *Aspectul psihoterapeutic al traumei psihice în epilepsie*. In: Congresul consacrat aniversării a 75-a de la fondarea Universității de Stat de Medicină și Farmacie „Nicolae Testemițanu”. 2020. p. 341-341.
7. GORINCIOI, Nadejda. *Particularitățile clinice și molecular-genetice ale epilepsiei simptomatice cauzate de neurocisticercoză*: tz.de.doct. în medicină. Chișinău, 2019. 180 p.
8. GROPPA, Stanislav, et al. *Epilepsia la adult: protocol clinic național PCN-290*. 2017.
9. GROPPA, Stanislav; GLAVAN, Aurelia; GLAVAN, Danu. *Stigmatul social și impactul asupra calității vieții în epilepsie*. Buletinul Academiei de Științe a Moldovei. Științe Medicale, 2016, 52.3: 154-160.

10. HADJIU, Svetlana; SPRINCEAN, Mariana; REVENCO, Ninel. *Epilepsiile copilului: particularități de diagnostic*. Buletin de perinatologie, 2017, 75.3: 4-16.
11. POPESCU-NEVEANU, Paul. *Dicționar de psihologie*. Ed. Albatros, București, 1978. pp.302.
12. POPOV, Alexandru. *Concept despre tulburările psihice și de comportament la bolnavii cu epilepsie. Definiții, delimitări, clasificare*. Analele Științifice ale USMF „N. Testemițanu”, 2013, 14.3: 638-646.
13. TUDOSE, Florin; TUDOSE, Catalina; DOBRONICI, Letitia. *Tratat de Psihopatologie si psihiatrie pentru psihologi*, București. Editura Trei, 2011. ISBN 978-973-707-551-2
14. VANGHELIE, Doinița; PANEA, C. *Epilepsia și tulburarea cognitivă-prezentare de caz*. Romanian Journal of Neurology, 2017, 16.
15. VATAMAN, Anatolie; DOȚEN, Natalia; CIOLAC, Dumitru; CHIOSA, Vitalie; GROPPA, Stanislav. *Profilul neuropsihologic la pacienți cu crize mioclonice: studiu descriptiv*. In: Revista de Științe ale Sănătății din Moldova, 2021, nr. 1(26), pp. 57-64. ISSN 2345-1467.
16. ВЫГОТСКИЙ, Лев Семенович. *Мышление и речь*. Directmedia, 2014.
17. ЕВДОКИМОВА, Ольга В, et al. *Клинико-психологические аспекты фармакорезистентной эпилепсии*. Личность в меняющемся мире: здоровье, адаптация, развитие, 2023, 11.2 (41): 141-154.
18. КИСТЕНЬ, О. В.; ЕВСТИГНЕЕВ, В. В.; САКОВИЧ, Р. А. *Психэмоциональные нарушения у пациентов с височной эпилепсией и их морфологическое обоснование*. Международный неврологический журнал, 2014, 7 (69): 9-13.
19. ЛУРИЯ, А. Р. *Высшие корковые функции человека*. "Издательский дом"" Питер""", 2023. ISBN 978-5-4461-0836-7
20. МАРЦЕНКОВСКИЙ, И. А.; МАРЦЕНКОВСКАЯ, И. И. *Эпилепсия и коморбидные расстройства психики и поведения*. Український медичний часопис, 2015, 4: 43-53.
21. НАРОДОВА, Екатерина. А, et al. *Роль личностных расстройств при ведении пациентов с фармакорезистентной эпилепсией после резекционных нейрохирургических вмешательств*. Анналы клинической и экспериментальной неврологии, 2018, 12.3: 23-29.
22. НАСЕР, Элми Уссам Бен, et al. *Системный анализ клинических, нейрофизиологических и психометрических особенностей пациентов с фармакорезистентной эпилепсией*. Наука молодых—Eruditio Juvenium, 2023, 11.2: 178–188.
23. СИВАКОВА, Наталия А; КОЦЮБИНСКИЙ, Александр; ЛИПАТОВА, Людмила. *Структура непсихотических психических расстройств у больных эпилепсией с различными вариантами течения заболевания*. Эпилепсия и пароксизмальные состояния, 2016, 8.4: 13-22.
24. ALPER, Kenneth R.; BARRY, John J.; BALABANOV, Antoaneta J. *Treatment of psychosis, aggression, and irritability in patients with epilepsy*. Epilepsy & Behavior, 2002, 3.5: 13-18. doi:10.1016/s1525-5069(02)00500-5.
25. BAKER, Gus A., et al. *Newly diagnosed epilepsy: cognitive outcome after 12 months*. Epilepsia, 2011, 52.6: 1084-1091. doi:10.1111/j.1528-1167.2011.03043.x.
26. BALOYANNIS, Stavros. J. *Epilepsy: A way from Herodotus to Hippocrates*. Epilepsy & Behavior, 2013, 28.2: 303. doi: 10.1016/j.yebeh.2012.04.003.
27. BAXENDALE, Sallie, et al. *Indications and expectations for neuropsychological assessment in epilepsy surgery in children and adults: Report of the ILAE Neuropsychology Task Force Diagnostic Methods Commission: 2017-2021 Neuropsychological assessment in epilepsy surgery*. Epileptic Disorders, 2019, 21.3: 221-234. doi: 10.1684/epd.2019.1065.
28. BERG, Anne T. *Epilepsy, cognition, and behavior: the clinical picture*. Epilepsia, 2011, 52: 7-12. doi: 10.1111/j.1528-1167.2010.02905.x.
29. BRANDT, Christian; MULA, Marco. *Anxiety disorders in people with epilepsy*. Epilepsy & Behavior, 2016, 59: 87-91. doi: 10.1016/j.yebeh.2016.03.020.
30. BRODIE, Martin J., et al. *Epilepsy, antiepileptic drugs, and aggression: an evidence-based review*. Pharmacological reviews, 2016, 68.3: 563-602. doi:10.1124/pr.115.012021.
31. BUSS, Arnold H.; DURKEE, Ann. *An inventory for assessing different kinds of hostility*. Journal of consulting psychology, 1957, 21.4: 343. doi:10.1037/h0046900.
32. CHIOSA, V.; CIOLAC, D.; CHELBAN, V.; GASNAȘ, D.; VATAMAN, A.; MUNTEANU, C.; GROPPA, St.; LEAHU, P.; CONDRATIUC, E.; AFTENE, D.; DRAGAN, D.; RACILA, R.;

- DOȚEN, N.; STOIANOV, N.; CONDREA, A.; ROPOT, D.; VASILIEVA, M. *Drug-resistant epilepsy: modern concepts, integrative mechanism, and therapeutic advances*. The Moldovan Medical Journal. 2021, 64(4):72-85. Doi.org/10.52418/Moldovan-med-j.64-4.21.14. ISSN 2537-6373.
33. CIOLAC, Dumitru. *Reorganization and resilience of brain networks in focal epilepsy*. Moldovan Medical Journal, 2020, 63.5: 5-8.
 34. COTTERMAN-HART, Sheri. *Depression in epilepsy: why aren't we treating?* *Epilepsy & Behavior*, 2010, 19.3: 419-421. doi: 10.1016/j.yebeh.2010.08.018.
 35. DEVINSKY, Orrin; VAZQUEZ, Blanca. *Behavioral changes associated with epilepsy*. *Neurologic clinics*, 1993, 11.1: 127-149. doi.org/10.1016/S0733-8619(18)30173-7.
 36. DEVINSKY, Orrin; PACIA, Steven V.; SHACHTER, Steven C. *Complementary and alternative therapies for epilepsy*. Demos Medical Publishing, 2005.
 37. DRANE, Daniel L. *Cognitive Effects of Chronic Epilepsy*. *Epilepsy*, 2014, 260-267 p. doi:10.1002/9781118456989.ch36.
 38. ELGER, Christian E.; HELMSTAEDTER, Christoph; KURTHEN, Martin. *Chronic epilepsy and cognition*. *The Lancet Neurology*, 2004, 3.11: 663-672. doi: 10.1016/S1474-4422(04)00906-8.
 39. FEGHIU, Ludmila, et al. *Drug-resistant epilepsies in children: clinical case*. In: 7th Congress of the Society of Neurologists Issue of the Republic of Moldova. 2021. p. 40-40.
 40. FISHER, Robert S. *The new classification of seizures by the International League Against Epilepsy 2017*. *Current neurology and neuroscience reports*, 2017, 17: 1-6. DOI: 10.1007/s11910-017-0758-6.
 41. HELMSTAEDTER, Christoph, et al. *Chronic epilepsy and cognition: a longitudinal study in temporal lobe epilepsy*. *Annals of Neurology: Official Journal of the American Neurological Association and the Child Neurology Society*, 2003, 54.4: 425-432. doi:10.1002/ana.10692
 42. HELMSTAEDTER, Christoph; WITT, Juri-Alexander. *Epilepsy and cognition—a bidirectional relationship?* *Seizure*, 2017, 49: 83-89. doi:10.1016/j.seizure.2017.02.017.
 43. HERMANN, Bruce P., et al. *Neurobehavioural comorbidities of epilepsy: towards a network-based precision taxonomy*. *Nature Reviews Neurology*, 2021, 17.12: 731-746. doi: 10.1038/s41582-021-00555-z.
 44. INIESTA, Ivan. *John Hughlings Jackson and our understanding of the epilepsies 100 years on*. *Practical Neurology*, 2011, 11.1: 37-41. doi:10.1136/jnnp.2010.235192.
 45. KANNER, Andres M. *Depression in epilepsy: a neurobiological perspective*. *Epilepsy currents*, 2005, 5.1: 21-27. doi: 10.1111/j.1535-7597.2005.05106.x.
 46. KANNER, Andres M. *Anxiety disorders in epilepsy: the forgotten psychiatric comorbidity*. *Epilepsy currents*, 2011, 11.3: 90-91.
 47. KANNER, Andres M., et al. *Cognitive disorders in epilepsy I: Clinical experience, real-world evidence and recommendations*. *Seizure*, 2020, 83: 216-222. doi:10.1016/j.seizure.2020.10.009.
 48. KARLOV, Vladimir. A. *Psychiatric disorders in epilepsy*. *Communication I. Annals of Clinical and Experimental Neurology*, 2007, 1.2: 9-16.
 49. KLEEN, Jonathan K., et al. *Cognitive and behavioral comorbidities of epilepsy*. *Epilepsia*, 2010, 51: 79-79. doi:10.1111/j.1528-1167.2010.02865.x.
 50. KWON, Oh-Young; PARK, Sung-Pa. *Depression and anxiety in people with epilepsy*. *Journal of clinical neurology*, 2014, 10.3: 175-188. doi:10.3988/jcn.2014.10.3.175.
 51. KWON, Oh-Young; PARK, Sung-Pa. *Interictal irritability and associated factors in epilepsy patients*. *Seizure*, 2016, 42: 38-43. doi:10.1016/j.seizure.2016.09.014.
 52. KWAN, Patrick, et al. *Definition of drug resistant epilepsy: consensus proposal by the ad hoc Task Force of the ILAE Commission on Therapeutic Strategies*. 2010. doi: 10.1111/j.1528-1167.2009.02397.x
 53. LEZAK, Muriel Deutsch, et al. *Neuropsychological assessment*. Oxford University Press, USA, 2004. ISBN 978-0-19-539552-5.
 54. LORING, David W.; MEADOR, Kimford J. *Cognitive and behavioral effects of epilepsy treatment*. *Epilepsia*, 2001, 42: 24-32.
 55. MULA, Marco. *Treatment of anxiety disorders in epilepsy: an evidence-based approach*. *Epilepsia*, 2013, 54: 13-18. doi.org/10.1111/epi.12101.

56. MULA, Marco. *Cognitive dysfunction in patients with epilepsy: focus on clinical variables*. Future Neurology, 2015, 10.1: 41-48. doi:10.2217/fnl.14.65.
57. MULA, Marco, et al. *Psychiatric comorbidities in people with epilepsy*. Neurology: Clinical Practice, 2021, 11.2: e112-e120. doi: 10.1212/CPJ.0000000000000874.
58. NOBRE, Anna C.; NOBRE, Kia; COULL, Jennifer Theresa (ed.). *Attention and time*. Oxford University Press, USA, 2010. doi:10.1093/acprof:oso/9780199563456.001.0001.
59. PIAZZINI, Ada, et al. *Aggressive behavior and epilepsy: a multicenter study*. Epilepsia, 2012, 53.10: e174-e179.
60. SEIDENBERG, Michael; PULSIPHER, Dalin T.; HERMANN, Bruce. *Association of epilepsy and comorbid conditions*. Future neurology, 2009, 4.5: 663-668. doi:10.2217/fnl.09.32.
61. STEFAN, Hermann.; PAULI, E. *Cognition and epilepsies*. Der Nervenarzt, 2008, 79: 77-92. doi:10.1007/s00115-008-2463-9.
62. VAN ELST, L. Terbartz. *Aggression and epilepsy*. The neuropsychiatry of epilepsy, 2002, 81-106.
63. WILSON, Barbara A. *Neuropsychological rehabilitation: Theory, models, therapy and outcome*. Cambridge University Press, 2009.
64. WITT, Juri-Alexander; HELMSTAEDTER, Christoph. *Cognition in the early stages of adult epilepsy*. Seizure, 2015, 26: 65-68. doi.org/10.1016/j.seizure.2015.01.018.
65. WORLD HEALTH ORGANIZATION, et al. *Epilepsy: a public health imperative*. World Health Organization, 2019. <https://apps.who.int/iris/handle/10665/325440>.
66. WILSON, Sarah J., et al. *Indications and expectations for neuropsychological assessment in routine epilepsy care: Report of the ILAE Neuropsychology Task Force, Diagnostic Methods Commission, 2013–2017*. Epilepsia, 2015, 56.5: 674-681. doi:10.1111/epi.12962.

THE LIST OF THE AUTHOR'S PUBLICATIONS ON THE THEME OF THE THESIS

Articles in scientific journals:

67. DOȚEN, Natalia; AFTENE, Daniela. *Affective disorders according to gender and marital status in epilepsy*. Revista de Științe ale Sănătății din Moldova, 2022, nr. 3 An.1(29), ISSN 2345-1467. p. 270.
68. DOȚEN, Natalia. *Tulburări afective în epilepsie*. Studia Universitatis Moldaviae (Seria Științe ale Educației), 2020, nr. 9(139), p. 161-165. ISSN 1857-2103.10.5281/zenodo.4277516
69. DOȚEN, Natalia. *Presurgical and postsurgical neuropsychological assessment in epilepsy*. Moldovan Medical Journal. 2020, 63.6, p. 57-62.
70. DOTEN, Natalia. *Anxiety in epilepsy. Gender differences*. The Moldovan Medical Journal, 2021.
71. VATAMAN, Anatolie; **DOȚEN, Natalia**; CIOLAC, Dumitru; CHIOSA, Vitalie; GROPPA, Stanislav. *Profilul neuropsihologic la pacienți cu crize mioclonice: studiu descriptiv*. Revista de Științe ale Sănătății din Moldova, 2021, nr. 1(26), pp. 57-64. ISSN 2345-1467.

In journals from the SCOPUS data bases:

72. AFTENE, Daniela, MUNTEANU, Corneliu, MUNTEANU, Ion, **DOȚEN, Natalia**. *Seizures as a 1st manifestation of Anti-Nmethyl-D-aspartate receptor encephalitis after ovarian teratoma removal*. European Journal of Neurology, 2021, 28.S1: 476-476. ISSN 1351-5101.

In the works of national scientific conferences with international participation:

73. DOȚEN, Natalia. *Particularități psihologice ale epilepsiei farmacorezistente*. In: *Integrare prin cercetare și inovare.: Științe ale educației*, 10-11 noiembrie 2022, Chișinău. Republica Moldova: Centrul Editorial-Poligrafic al USM, 2022, SE, p. 30-33. ISBN 978-9975-62-471-8.
74. DOȚEN, Natalia. *Depresia în epilepsie*. In: *Integrare prin cercetare și inovare*. Științe sociale. Rezumate ale comunicărilor . Vol. 1, 7-8 noiembrie 2019, Chișinău. Republica Moldova: CEP USM, 2019, p. 218-221. ISBN 978-9975-149-50-1.

75. DOȚEN, Natalia. Impactul epilepsiei asupra familiei. In: *Metodologii contemporane de cercetare și evaluare.*; Științe Sociale și ale Educației, 22-23 aprilie 2021, Chișinău: CEP USM, 2021, p. 100-105. ISBN 978-9975-159-16-6.
76. DOȚEN, Natalia. Aspectele psihologice și sociale ale epilepsiei. In: *Integrare prin cercetare și inovare. Științe sociale.* 10-11 noiembrie 2020, Chișinău. Republica Moldova: CEP USM, 2020, p. 74-78. ISBN 978-9975-152-53-2.
77. DOȚEN, Natalia. Terapii psihologice în epilepsie. In: *Integrare prin cercetare și inovare.*; Științe sociale, 10-11 noiembrie 2021, Chișinău. Republica Moldova: Centrul Editorial-Poligrafic al USM, 2021, SS, p. 53-56. ISBN 978-9975-158-55-8.

In online journals:

78. DOȚEN, Natalia. Anxietatea în epilepsie. В НСВЄЇКІНА, Г. І. Формування культури особистості як пріоритетне завдання сучасної української освіти. 2020. Вип. 58.,258-260 с.

In the works of international scientific conferences:

79. DOȚEN, Natalia. Tulburări cognitive în epilepsie, cauze și factori de risc. In: *Dezvoltarea economico-socială durabilă a euroregiunilor și a zonelor transfrontaliere.* Vol.36, 30 octombrie 2020, Iași, România: Performantica, 2020, p. 235-240. ISBN 978-606-685-744-4.
80. DOȚEN, Natalia. Particularități comportamentale în epilepsia farmacorezistentă. In: *Dezvoltarea economico-socială durabilă a euroregiunilor și a zonelor transfrontaliere,* Ed. 18, 28 octombrie 2022, Iași, România. Iași: Performantica, 2022, Vol.43, p. 149-156. ISSN 2971- 8740 ISSN- L 2971-8740.

In the works of national scientific conferences:

81. DOȚEN, Natalia. Anxiety in epilepsy. Gender differences. In: *7th Congress of the Society of Neurologists Issue of the Republic of Moldova,* 2021. p.32-32.
82. DOȚEN, Natalia; DRAGAN, Diana. *Predictors of cognitive impairments in drug resistant epilepsy.* In: *Cercetarea în biomedicină și sănătate: calitate, excelență și performanță,* Ed. 1, 20-22 octombrie 2021, Chișinău, Republica Moldova: 2021, (R), p. 215. ISBN 978-9975-82-223-7
83. VATAMAN, Anatolie; CIOLAC, Dumitru; **DOȚEN, Natalia;** CHIOSA, Vitalie. *Profilul neuropsihologic al pacientului cu crize mioclonice.* In: *Cercetarea în biomedicină și sănătate: calitate, excelență și performanță,* Ed. 1, 20-22 octombrie 2021, Chișinău, Republica Moldova: 2021, (R), p. 202. ISBN 978-9975-82-223-7

Participation in Congresses with E-poster:

84. DOȚEN, Natalia. *35th International Epilepsy Congress.* The neuropsychological profile of the patients with drug-resistant epilepsy: a study of Moldovan population. Organizatori - ILAE, 02-06 septembrie 2023.
85. DOȚEN, Natalia. *34th International Epilepsy Congress.* A psychosocial perspective of depression and anxiety in women with epilepsy. Organizatori - ILAE, 28 august -1septembrie 2021.
86. DOȚEN, Natalia. *Congresul Internațional al Universității Apollonia "Pregătim viitorul promovând excelența",* Ediția a XXXI-a. *Particularitățile cognitive și afective la persoanele cu epilepsie farmacorezistentă.* Organizatori - Universitatea Apollonia, 1-3 martie, 2021, Iași, România.
87. DRAGAN, Diana; **DOȚEN, Natalia.** Profilul clinic și neuropsihologic al pacienților cu amnezie tranzitorie epileptică. Prezentare de caz clinic. In: *Congresul consacrat aniversării a 75-a de la fondarea Universității de Stat de Medicină și Farmacie „Nicolae Testemițanu”.* 2020. p. 346-346.

88. VATAMAN, Anatolie; CIOLAC, Dumitru; CHIOSA, Vitalie; **DOȚEN, Natalia**; GROPPA, Stanislav. *Particularități morfologice subcorticale ale epilepsiei cu crize mioclonice*. In: Journal of Medical Dentistry 2023. ISSN 2066-6063. Congresul Internațional al Universității „Apollonia” din Iași „Pregătim viitorul promovând excelența” Ediția a XXXIII-a 2-5 martie 2023, Iași Romania.

Certification of innovation

DOȚEN, N., GROPPA. S. *Testarea neuropsihologică a pacienților cu epilepsie farmacorezistentă*. Certificat de inovație nr. 5959; 19.10.2022. Universitatea de Stat de Medicină și Farmacie "Nicolae Testemițanu".

Diploma and gold medal. Expoziția Internațională de Inovație și Transfer Tehnologic EXCELLENT IDEA. 2nd edition, 2023. CHIOSA Vitalie, VATAMAN Anatolie, CIOLAC Dumitru, DOȚEN Natalia, LEAHU Pavel, MATEI Alexandru, GROPPA Stanislav. *Innovation cycle for epilepsy and migraine patients through neuronal network paradigm*. Nicolae Testemițanu State University of Medicine and Pharmacy of the Republic of Moldova.

Participation in the national state program: “Integrating epileptogenic mechanisms to create a network of multimodal diagnosis and treatment of epilepsy” Program (2020-2023) the project code: 20.80009.8007.40. (2020-2023).

ADNOTARE

Doțen Natalia. Particularități cognitive, afective și comportamentale ale persoanelor cu epilepsie farmacorezistentă. Teză de doctor în psihologie. Chișinău, 2023

Structura tezei: introducere, trei capitole, concluzii generale și recomandări, bibliografia (care include 288 de titluri), 22 anexe, 153 de pagini de text de bază, 32 de figuri, 21 de tabele. Rezultatele obținute sunt publicate în 26 de lucrări științifice.

Cuvinte cheie: particularități cognitive, particularități afective, particularități comportamentale, epilepsie farmacorezistentă, epilepsie medicamentos controlată, profil psihologic al persoanei cu epilepsie farmacorezistentă, profil psihologic al persoanei cu epilepsie medicamentos controlată, intervenție psihologică.

Scopul lucrării: stabilirea particularităților cognitive, afective și comportamentale ale persoanelor cu epilepsie farmacorezistentă, elaborarea unui program de intervenție psihologică în vederea îmbunătățirii proceselor cognitive, afective și comportamentale ale persoanelor cu epilepsie farmacorezistentă.

Obiectivele cercetării: (1) analiza și sinteza literaturii de specialitate cu referire la particularitățile psihologice ale epilepsiei farmacorezistentă; (2) identificarea particularităților cognitive, afective și comportamentale ale persoanelor cu epilepsie farmacorezistentă; (3) analiza comparativă a particularităților cognitive, afective și comportamentale ale persoanelor cu epilepsie farmacorezistentă și ale persoanelor cu epilepsie medicamentos controlată; (4) analiza profilului psihologic al subiectului cu epilepsie farmacorezistentă și epilepsie medicamentos controlată; (5) elaborarea unui program de intervenție psihologică în scopul îmbunătățirii proceselor cognitive, afective și comportamentale ale persoanelor cu epilepsie farmacorezistentă și evaluarea eficienței acestuia.

Noutatea și originalitatea științifică: această cercetare reprezintă prima lucrare în contextul Republicii Moldova cu referire la particularitățile cognitive, afective și comportamentale ale persoanelor cu epilepsie farmacorezistentă. Originalitatea cercetării constă în stabilirea particularităților psihologice ale persoanelor cu epilepsie farmacorezistentă; stabilirea diferențelor dintre particularitățile specifice persoanelor cu epilepsie farmacorezistentă în comparație cu persoanele cu epilepsie medicamentos controlată; elaborarea unui profil psihologic al persoanelor cu epilepsie farmacorezistentă și al celor cu epilepsie medicamentos controlată; elaborarea unui program de intervenție psihologică complexă în vederea îmbunătățirii proceselor cognitive, afective și comportamentale ale persoanelor cu epilepsie farmacorezistentă.

Rezultatele obținute care contribuie la soluționarea problemei științifice: stabilirea particularităților psihologice ale persoanelor cu epilepsie farmacorezistentă; elaborarea unui profil psihologic al persoanelor cu epilepsie farmacorezistentă cu scoaterea în evidență a caracteristicilor în funcție de etiologia epilepsiei, aspectul de gen, nivelul de educație, statutul profesional, mediul de trai, statutul marital, durata bolii și frecvența crizelor epileptice; elaborarea unui program de intervenție psihologică orientat spre ameliorarea proceselor cognitive, diminuarea tulburărilor afective și modificarea comportamentului persoanelor cu epilepsie farmacorezistentă.

Semnificația teoretică: prezentul studiu asigură completarea cadrului teoretic cu sinteze din literatura de specialitate privind epilepsia farmacorezistentă; adaptarea complexă a conceptului de epilepsie farmacorezistentă domeniului psihologiei generale prin stabilirea și analiza particularităților cognitive, afective și comportamentale asociate epilepsiei farmacorezistente.

Valoarea aplicativă: constă în elaborarea unui profil psihologic al persoanelor cu epilepsie farmacorezistentă, precum și elaborarea unui program de intervenție pentru reabilitarea proceselor cognitive, ameliorarea sferei afective și a celei comportamentale. Prin urmare, programul poate fi inclus în activitățile didactice din instituțiile de profil, în cadrul suporturilor de curs pentru psihologi clinicieni și în cadrul activităților pentru specialiștii care beneficiază de formare continuă în domeniu.

Implementarea rezultatelor științifice: rezultatele științifice ale acestei cercetări au fost prezentate și implementate în cadrul activităților științifice și metodice ale Departamentului Psihologie a Universității de Stat din Moldova, activităților științifice, metodice de asistență psihologică și medicală ale Departamentului Clinic de Neurologie, STROKE și Epileptologie, al Centrului Național de Epileptologie, Programului de Stat „Integrarea mecanismelor epileptogenezei cu scopul creării rețelei de diagnostic și tratament multimodal al epilepsiei”, activităților didactice ale Catedrei Neurologie 2 a Universității de Stat de Medicină și Farmacie „Nicolae Testemițanu”, având în calitate de beneficiari – psihologi, medici neurologi, neurofiziologi, neurochirurghi și medici rezidenți.

ANNOTATION

Doten Natalia. Cognitive, affective and behavioural features of individuals with drug-resistant epilepsy. Doctoral Thesis in psychology. Chisinau, 2023

Thesis structure: introduction, 3 chapters, general conclusions and recommendations, bibliography containing 288 references, 22 appendices, 153 pages of main text, 32 figures and 21 tables. The obtained results have been published in 26 scientific papers.

Keywords: cognitive features, affective features, behavioural features, drug-resistant epilepsy, well-controlled epilepsy, psychological profile of the individual with drug-resistant epilepsy, psychological profile of the individual with well-controlled epilepsy, psychological intervention.

Research purpose: to determine the cognitive, affective and behavioural features of individuals with drug-resistant epilepsy, to develop a psychological intervention program aimed at improving the cognitive, affective and behavioural processes of individuals with drug-resistant epilepsy.

Research objectives: (1) to analyze and synthesize the specialized literature regarding psychological features of drug-resistant epilepsy; (2) to identify the cognitive, affective and behavioural features of individuals with drug-resistant epilepsy; (3) to compare the cognitive, affective and behavioural features of individuals with drug-resistant epilepsy with those with well-controlled epilepsy; (4) to analyze the psychological profile of the individual with drug-resistant epilepsy and of the individual with well-controlled epilepsy; (5) to develop a psychological intervention program to improve the cognitive, affective and behavioural processes of the individuals with drug-resistant epilepsy and to evaluate its effectiveness.

Novelty and scientific originality: this paper represents the first research conducted in the Republic of Moldova that focuses on cognitive, affective and behavioural features of drug-resistant epilepsy. The originality of the research lies in: the determination of psychological features specific to individuals with drug-resistant epilepsy; the identification of the differences between the specific features of individuals with drug-resistant epilepsy in comparison with individuals with well-controlled epilepsy; the development of the psychological profiles of individuals with drug-resistant epilepsy and those with well-controlled epilepsy; and the development of a complex psychological intervention program to improve the cognitive, affective and behavioral processes of individuals with drug-resistant epilepsy.

Results and contribution to the scientific problem: the research has contributed to the determination of the psychological features of individuals with drug-resistant epilepsy. It has also established a psychological profile of the individual with drug-resistant epilepsy, highlighting characteristics related to epilepsy etiology, gender, education, professional status, marital status, living environment, disease duration and frequency of epileptic seizures. Additionally, it was developed a psychological intervention program targeting the improvement of cognitive processes, affective disorders reduction and behavioural modification in individuals with drug-resistant epilepsy.

Theoretical significance: the research contributes to the existing theoretical framework by providing literature summaries on drug-resistant epilepsy; and adapting the concept to the field of general psychology by identifying and analyzing the cognitive, affective and behavioural features associated with drug-resistant epilepsy.

Practical value: the practical value consists in the development of a psychological profile of the individual with drug-resistant epilepsy and the creation of an intervention program for the rehabilitation of cognitive processes and improvement of the affective and behavioral dimensions. This program can be integrated into the educational activities in institutions, included in course materials for clinical psychologists and utilized in continuous training for specialists in the field.

Implementation of scientific results: the scientific findings of this research have been presented and implemented in the scientific and methodological activities of the Department of Psychology at the Moldovan State University; as well as in the psychological and medical assistance provided by the Clinical Department of Neurology, STROKE and Epileptology; in the National Center of Epileptology; in the framework of the State "Integrating epileptogenic mechanisms to create a network of multimodal diagnosis and treatment of epilepsy" Program (2020-2023); and have been incorporated in the didactic activities of the Neurology 2 Department of the State University of Medicine and Pharmacy "Nicolae Testemitanu" of the Republic of Moldova, having as beneficiaries psychologists, neurologists, neurophysiologists, neurosurgeons and resident doctors.

АННОТАЦИЯ

Доцен Наталия. Когнитивные, аффективные и поведенческие особенности людей с фармакорезистентной эпилепсией. Диссертация на соискание ученой степени доктора психологии. Кишинэу, 2023 г.

Структура диссертации: предисловие, три главы, общие выводы и рекомендации, библиография (288 источника), работа включает 22 приложений, 21 таблиц и 32 рисунка, содержание работы изложено на 153 страницах основного текста, результаты исследования опубликованы в 26 научных работах.

Ключевые слова: когнитивные особенности, аффективные особенности, поведенческие особенности, фармакорезистентная эпилепсия (ФРЭ), контролируемая эпилепсия (КЭ), психологический профиль человека с (ФРЭ), психологический профиль человека с (КЭ).

Цель работы: определить когнитивные, аффективные и поведенческие особенности людей с фармакорезистентной эпилепсией, разработать программу психологического вмешательства для улучшения когнитивных, аффективных и поведенческих процессов у людей с фармакорезистентной эпилепсией.

Задачи исследования: (1) проанализировать и обобщить литературу по психологическим особенностям ФРЭ; (2) выявить когнитивные, аффективные и поведенческие особенности людей с ФРЭ; (3) провести сравнительный анализ когнитивных, аффективных и поведенческих нарушений людей с ФРЭ и людей с КЭ; (4) проанализировать психологический профиль людей с ФРЭ и КЭ; (5) разработать программу психологического вмешательства для улучшения когнитивных, аффективных и поведенческих процессов людей с фармакорезистентной эпилепсией и оценить ее эффективность.

Научная новизна и оригинальность: данное исследование представляет собой первую работу в контексте Республики Молдова в отношении когнитивных, аффективных и поведенческих особенностей людей с фармакорезистентной эпилепсией. Оригинальность исследования заключается в: установлении психологических особенностей людей с ФРЭ; установлении различий между особенностями людей с ФРЭ по сравнению с людьми с КЭ; разработке психологического профиля людей с ФРЭ и людей с КЭ; разработке комплексной программы психологического вмешательства с целью улучшения когнитивных, аффективных и поведенческих процессов людей с ФРЭ.

Результаты исследования, способствующие решению научной задачи: установление психологических характеристик людей с фармакорезистентной эпилепсией; разработка психологического профиля человека с ФРЭ с выделением характеристик в зависимости от этиологии эпилепсии, гендерного аспекта, уровня образования, профессионального статуса, среды проживания, семейного положения, длительности заболевания и частоты эпилептических приступов; разработка программы психологического вмешательства, направленной на улучшение когнитивных процессов, снижение аффективных и поведенческих расстройств у людей с фармакорезистентной эпилепсией.

Теоретическая значимость: исследование дополняет теоретическую базу синтезом данных из литературы по фармакорезистентной эпилепсии; комплексно адаптирована концепция фармакорезистентной эпилепсии к области общей психологии путем установления и анализа когнитивных, аффективных и поведенческих особенностей, связанных с фармакорезистентной эпилепсией.

Практическое значение исследования: заключается в составлении психологического профиля человека с фармакорезистентной эпилепсией, а также в разработке программы вмешательства для реабилитации когнитивных процессов, улучшения аффективной и поведенческой сферы. Таким образом, программа может быть включена в учебную деятельность институтов, в курсовую поддержку клинических психологов и в деятельность специалистов, проходящих непрерывное обучение в данной области.

Внедрение научных результатов: Научные результаты исследования внедрены в научно-методическую деятельность кафедры психологии МГУ; в работу психолого-медицинской помощи Клинического отделения неврологии и эпилептологии; в Национального центра эпилептологии; в рамках включены в Государственную программу "Интеграция механизмов эпилептогенеза с целью создания сети мультимодальной диагностики и лечения эпилепсии"; в процессе обучения и подготовки неврологов, врачей-резидентов и психологов в рамках кафедры неврологии 2 Государственного университета медицины и фармакологии им. Николае Тестемилану Республики Молдова.

DOȚEN NATALIA

**COGNITIVE, AFFECTIVE AND BEHAVIOURAL FEATURES OF INDIVIDUALS
WITH DRUG-RESISTANT EPILEPSY**

511.01– GENERAL PSYCHOLOGY

**Scientific summary
of the Doctoral Thesis in Psychology**

Approved for printing: 28.09.2023
Paper format. Offset paper.
Printing sheets.:3

Offset printing. A5
Circulation 25 ex.
Order nr. 80

Tipografia Lexon
mun. Chișinău, str. Pan Hallippa 6G, 13a
tel.: 022-28-81-78