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The type of the reaction to the disorder and the type of the interpersonal relationships during the temporal epilepsy as a chronic disorder

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Any chronic disorder, especially epilepsy, apart from its objective and social (stigma) meanings, takes on a personal significance for the patient. Temporal lobe epilepsy's as a chronic disorder influence on the patient's personality was not thoroughly investigated in the modern epileptology so far.

During the course of the disease, the patient doesn't remains in the passive condition. He works out defined reaction to his own disorder, as well as a style of the interpersonal relations.

The main goal of our investigation was to determine the character of the style of interpersonal relations of patients with temporal lobe epilepsy, the type of their reaction to the disorder, and interrelation with its clinical signs.

The survey covered 155 respondents, including 54 people with temporal lobe epilepsy, 31 with ischemic heart disease and 70 healthy persons. The patients differed from one another in terms of the side of the pathological focus being affected, the age of disorder onset, type and frequency of seizures, type of treatment (mono-therapy vs. poly-therapy) and etiological factors. The patients surveyed did not include those with deteriorated intellectual abilities, which would be established by means of a neuro-psychological investigation and status progress of the disease among patients. The data obtained as a result of the surveys were processed by using SPSS 12.0 software.

The following model of the type of the reaction to the disorder in the case of temporal epilepsy has been devised in the light of the research data assessment and analysis: the type of reaction to the disorder is affected by (i) clinical indicators (seizure frequency, the age of disordere onset and lateralization), (ii) characteristic of temporal lobe epilepsy as a chronic disorder (fears related to the social consequences of the disorder), (iii) partly, type of interpersonal relations (the connection has a dual nature), (iv) personal characteristics of a patient (the rate of neurocentrism) and demographic variables (gender, age).

Therefore, when we speak about the treatment of patients with temporal lobe epilepsy, it is indispensable to admit the importance of psycho-rehabilitation aid. In this case the aim of rehabilitation and psychological consultation is to change the system of relationships, which comprises the patient's attitude towards the disorder, to himself and to the environment in terms of his disease. This system of relations has mainly conscious character and therefore, should be directed to the formation of more realistic, adequate forms of personal reaction.

Introduction

Recent years have seen an increased interest in social implications of chronic diseases. This can be explained by a wider spread of chronic diseases, the emergence of modern approaches to the issues of medical and social rehabilitation of patients suffering from chronic diseases and the development of medical insurance infrastructure. An acute chronic condition has a significant effect on the quality of life of a person, restricting his/her interpersonal relations and affecting his/her lifestyle and objectives. This also has an impact on a patient's interaction with the outside world as well as his/her self-identification and perception of his/her condition.

The study of subjective aspects of the disease has a long history. However, recent years have been marked by a wider use of a multidisciplinary approach, which implies a complex investigation of clinical, psychological and social aspects of a chronic disease and their consideration in treatment and rehabilitation.

The study of subjective aspects is particularly important with respect to diseases which are characterized by pronounced social implications. Epilepsy is one of such diseases.

Epilepsy is one of the most common chronic neurological disorders. A variety of forms in which it can be manifested calls for a special approach. Epilepsy is a multi-factor disease and requires a multi-disciplinary approach.

Epilepsy is a polyetiologic disease, which is characterized by recurrent seizures with or without convulsion. It is triggered by a strong electrical discharge in the brain and has numerous manifestations. The disease is ranked among chronic diseases due to its clinical properties (e.g. sudden seizures). It is also known to have social implications.

The so-called temporal lobe epilepsy, which presupposes the presence of an epileptogenic damage in the temporal lobe, is one of the most common in the clinical history of epilepsy. Temporal lobe

epilepsy makes a fairly large share (30-35%) of epilepsy. Moreover, a medial surface of a temporal lobe is part of a limbic system, which takes part in the regulation of emotional processes and requirements. Temporal epilepsy, as a rule, implies the deficiency of the functioning of the lymphatic system. This explains the importance of emotional and personal changes, often severe, in the clinical picture of temporal epilepsy. In the cases of temporal epilepsy, apart from decreasing seizures, it is essential to ensure timely identification and compensation of personal and emotional difficulties.

It is of note that emotional changes in persons suffering from epilepsy are to a certain extent triggered by social, psychological and biological factors. Specific properties of such factors need to be defined in each specific case. In many instances it appears difficult to control biological factors (level and severity of brain damage) during treatment, though it is possible to envisage and regulate psycho-social factors in the process of rehabilitation.

Psychological assistance plays an important role in the effective treatment of epilepsy, as it aims at the proper social, labor and personal adjustment of a patient to his/her illness. Therefore, identification of a patient's personal compensatory resources with the aim of defining main areas of psychological adjustment and rehabilitation work are important issues. Effective treatment and rehabilitation can be achieved only by taking into consideration personal emotional reactions of a patient, his/her attitude to the surroundings and to his/her disease. Emotions arising in the course of disease may, despite successful anti-epilepsy treatment and remission of seizures, hinder the process of recovery. It is essential to distinguish between an epilepsy as a disease caused by brain dysfunction, and epilepsy as a condition which characterizes a person and surroundings.

The effectiveness of treatment and rehabilitation can be increased only if personal and emotional responses of a patient arising in the course of disease, his/her attitude to the surroundings and his/her own disease is considered. The process of treatment and its positive dynamics are largely defined by the nature of a mental image of the disease created by the patient.

A mental image of the disease combines all personal experiences associated with the disease, a subjective perception of the disease and results of its cognitive procession, and ultimately determines a behavioral activity. The mental image of a disease is a phenomenon which incorporates the emotional attitude to oneself on one hand and to the surroundings, including the micro-social, on the other. It is my opinion that this phenomenon largely defines the emotional condition of a person suffering from a chronic disease, the 'behavior of a disease', the attitude to treatment and eventually, the quality of life. The determination of a mental image of the disease allows a doctor to adapt treatment, determine the attitude of a patient to the treatment, and timely detect and prevent complications. An inadequate mental image worsens the quality of life of patients, prevents them from personal and professional self-realization and complicates their social adaptation, which is especially relevant in our reality.

The study of the emotional attitude of patients suffering from epilepsy to themselves is one of the most important issues acquiring medical and social relevance.

This raises the question as to whether organic properties of chronic diseases shall be considered a precondition in the process of personal-emotional response or it is chronic character of the disease itself that influences these properties. What shall be considered responsible for the formation of a response to the disease? These issues are highly relevant in contemporary medicine and clinical psychology.

Mental Characteristics of a Chronic Disease

Throughout his/her lifetime, a person may get an illness of different complexities and duration. An illness may not leave a trace in a healthy person, but a severe disease makes a person refuse an ordinary life for a long time, and in the case of hospitalization – an ordinary environment. Patients with a severe illness, as well as their family members, friends and co-workers expect the suspension or reduction of social activity only for a short period of time. These expectations change drastically when a person is diagnosed with a chronicle disease. The latter may entirely change the life of a person.

Chronic condition significantly affects the life of a person, which is related to a prolonged and expensive treatment and a high risk of a lethal end. This leads to a large number of psychological problems, which arise not out of special psychological mechanisms related to a disease, but rather of the fact that such mechanisms become active in specific, disease-related and modified circumstances.

There is no universal medical definition of a chronic disease, since chronic conditions differ from each other in terms of the causes, progress, variability and consequences. A chronic disease is characterized by inevitability, secondary defects, complications and imperfection.

One of the features of a chronic disease is its long duration, the so-called 'time factor'. However, in some cases, disease symptoms may not be clearly pronounced or may be absent during a certain period of time, but the knowledge of being affected by the illness and awareness of possible symptoms, may also condition a chronic character of a disease. Apart from that, a disease is always perceived from the perspective of past experience and future prognosis. These aspects will be considered in more detail in the following chapters.

There is a great variety of chronic diseases. These include almost all cardio-vascular diseases, most types of cancer, asthma and chronic lung diseases, diabetes, arthritis, digestive diseases, etc. All of these conditions meet relevant criteria, such as commonality, long duration and expensive treatment (Maes, Leventhal & de Ridder, 1996), which allow us to affiliate them with a group of chronic diseases.

Living with a chronic disease is associated with: i) life-related difficulties, physical exhaustion, frequent pains, which affect a person's personal goal and ambitions; ii) need for a regular check-up and focus on the results of treatment; iii) a high cost, both from the financial and emotional points of view (treatment associated with large expenses and strong pains causes additional psychological stress (Boice,1998) and time (e.g. regular visits to doctors, hospitalization, regular check-ups, staying home and maintaining a special health treatment regime); iv) it influences every-day activities, professional skills, career, relations, self-concept; v) is accompanied by fears of losing control over oneself (vulnerability).

A disease has cultural and personal importance, on the basis of which it is perceived by people. Cultural significance implies the attachment of importance to a disease or its separate symptoms. This, in its turn, is often based on myths and prejudice prevailing in the society with respect to a specific disease. There are more (e.g. tuberculosis, epilepsy, venereal diseases) and less stigmatized diseases (e.g. cardio diseases, stomach diseases). Asthma, tuberculosis and epilepsy are chronic diseases carrying cultural consequences; people suffering from epilepsy are affected by a widely spread myth, according to which epilepsy invariably affects cognitive abilities and general functional capacity (the existence of such a myth is confirmed by a vast number of studies). Despite a highly individual character of personal importance of a disease, attention is commonly paid to the loss of control, change of goals and the restriction of freedom (Place, 1993). Hence, an opinion claiming that living in the society of healthy people is the source of the greatest tragedy for people affected by a chronic disease appears highly convincing.

When affected with a chronic disease, a person changes drastically, which becomes manifested not only in the change of a character, but also in his/her interaction with the surroundings and the public. A severe chronic disease essentially changes the social situation of personal development. It affects the psychic capabilities, leads to the restriction of relationship with the surrounding people and often, due to objective or subjective reasons, determines the full modification of a person's activity. This eventually leads to the alteration of a person's interpersonal relations and affects the perception of his/her own self by a patient under new circumstances within the context of interpersonal relations.

- Disease acquires a personal essence for a person. During illness, a person forms his/her own understanding of the disease, i.e. a subjective perception. He/she thus develops an understanding of the forms of manifestation of his/her disease, its progress and treatment. This leads to the formation of a subjective model of a disease, which contains two components: sensorial-emotional and logical. A sensorial-emotional component arises under the immediate impressions and senses relating to the manifestation of a disease and its progress. The same sort of information lies at the basis of the formation of a logical component with the difference that the opinions and the knowledge a person's uses to explain the causes and mechanisms play an essential role.

R. A. Luria (1944) claimed that the mental image of a disease is 'what a person experiences, a whole spectrum of his senses, his/her general mood – attitude, self-observation, a perception of one's own self, its causes – a huge world of a disease, which is a complex unity of perception and senses, emotions, fits of passion, conflicts, experiences and traumas' (Luria, 1977). Below are outlined the various factors taking part in the formation of a mental image:

1. nature of a disease – an acute or chronic disease, accompanied or not by pain, type of treatment required (outpatient, in-patient, conservative or surgical), restriction of activity or a cosmetic defect, etc;
2. circumstances under which the disease persists - a social factor of a patient's life – problems in the family, at work, in the immediate social environment, etc; treatment situation: severity and duration

of treatment procedures, the level of patient's dependence on medical facilities and personnel, the style of relationship between a patient and doctors, etc.

3. pre-morbid characteristics of a person – mainly age, level of general sensitivity, a character of emotional responsiveness or temperament, a general level of a patient's activity, self-assessment, values and character;

4. A patient's past experience – whole life experience of a patient and the means through which he/she responds to and overcome a dangerous situation.

A mental image of a disease – a secondary set of psychological symptoms, which may serve as an important factor leading to the disability or, contrary, recovery of a person. Therefore, a mental image of a disease is a central phenomenon which should be targeted during a psycho-corrective and psychotherapeutic work in the event of a somatic chronic disease. It acquires particular relevance in respect with diseases which, owing to their objective (organic) symptoms and subjective attitudes (stigma), are often conceived as socially unacceptable. It is such a group of diseases that epilepsy is affiliated with.

Epilepsy and its Psychological Characteristics

In epileptology there has been a lack of due attention to the effects of epilepsy, as a chronic disorder, on a patient's character epilepsy. Consideration is mainly given to personal changes arising under epilepsy, while the genesis of the changes is conceived as a result of a pathological organic process. There is a lack of studies which would take into account the role of social and psychological factors. Epilepsy is a chronic disorder and may be characterized by all the features typical to it; psychological factors, such as a patient's attitude to his/her own disorder, surroundings, as well as the attitude of the environment to a patient, play a vital role in the process of the character formation of a patient.

- It has been admitted that patients suffering from epilepsy have social and emotional problems far more acute that other groups of patients. This is caused not only by the fear of the loss of consciousness or of becoming crippled, but by the fact that uncontrollable seizures insult their dignity and create additional emotional problems. The inevitability and unexpectedness of a seizure may diminish a personal motivation to resist changes in life, which causes a lack of confidence and often, even leads to depression.

A stigma is a label which is attached to a person by the society, which distinguishes it from the other members of the society and causes a social defamation of a person (Baker, Brooks, Buck & Jacoby, 2000; Morell, 2002; Jacoby, Snape, Baker, 2005). A whole set of undesirable features is ascribed to a person due to a stigma, which is preconditioned by prejudices existing in the public in regard with the matter. It is the subjective perception of a 'stigma' by a patient that defines the level to which he/she considers himself/herself a victim of a prejudice.

The diagnosis of epilepsy is often a stigma. Epilepsy is in many cases conceived as a shameful condition that is to be concealed and a disease the mentioning of which is unpleasant. Patients often fail to accept their disease and even hate to hear the name of it (Gagoshidze & Kasradze, 2003).

A stigma associated with epilepsy is not homogenous and largely depends on the pre-morbid status of a patient in the society, the so-called public conceptualization of a condition (the trend for condemnation/acceptance), clinical progress of a disease, side effects of medicine, age, sex, education and employment (Jacoby et al., 2005, Baskind & Birbeck, 2005).

- The importance of assessing the quality of life is largely defined by the assessment of the information on the impact of the chronic disorder and of the results of treatment (Baker, 2000). Patients affected by a chronic disorder, their family members and doctors are chiefly interested in the functional effect of a disease and the results of medication, while in the case of epilepsy, the disorder has a major influence on the physical, social, psychological and neuropsychological spheres.

Patients suffering from epilepsy face a high risk of physical injury, e.g. there is a high rate of breakages, tooth damage and head traumas. Apart from that, patients are significantly affected by the site effects of anti-convulsants – headache, dizziness, fatigue, sleepiness, gain of weight, complaints about cognitive condition (lack of concentration, memory problems, and judgment difficulties).

Social limitation associated with epilepsy affects a patient's family, whose response to the diagnosis of epilepsy often develops into hyper-care or, on the contrast, the rejection of the disorder.

Epilepsy is characterized by the loss of control over oneself/one's own body. A seizure may develop ay any time and at any place. Therefore, it should not be surprising that most of the patients having epilepsy suffer from depression, low self-assessment, and increased disturbance. Their emotional condition can be determined by clinical characteristics of epileptic focus (localization, lateralization, character of neuronal bonds, etc). These may be accompanied by the deterioration of cognitive skills and motor restrictions (Baker, 2000).

Epilepsy and a person – several phases can be identified in the development of this interaction. It is well-known that some of the concepts directly linked to certain type of personalities. The majority of the theories claiming personality defined predispositions have been rejected by now.

According to the contemporary vision, personal changes arising during epilepsy can be interpreted by taking into account a large number of factors. Hermann and Whitman (1990) considered all risk-factors that can be related to the arising of personal-emotional disorders under epilepsy and identified three main categories: (i) brain related factors; (ii) psycho-social factors of non-organic nature and (iii) treatment related factors. Interacting with one another, all of these variable/risk factors may possibly cause personal-emotional disorders.

The importance of some epileptic variables in developing psychopathology during epilepsy has been established:

❖ Age of disorder onset – the duration of the progress of epilepsy is often linked to psychopathology during epilepsy and the level of intellectual functioning;

The early onset of the disorder is related to its duration. The course of the disorder for a long period of time (during years) leads to adaptation and the reduction of disorder-induced perturbation (Fawcett, Thornton & Baker, 1995). But this theory is not supported by the results of our study. Patients who developed temporal lobe epilepsy before the age of 10 reveal a high rate of these types of response, while those who got the disorder above that age show a lower rate of the presence of this type. The earlier the disorder sets in, the more pronounced is the feeling of despair, the loss of the hope of recovery, pessimism and the fear of being a burden for relatives and close people. It can be suggested that partly this is due to ineffective treatment (the patients surveyed by us include those who, despite the long period of the presence of the disorder and its treatment, had seizures and anomalous EEG indicators). Regressive analysis (Hermann, 1990) also points to the link between the early onset of a disorder and changes in the emotional-personal sphere. Apart from that, the presence of epilepsy during years may lead to a variety of neuro-autonomic function disorders. Referring back to the viewpoint concerning the obsessive thoughts about anatomic disorders during temporal lobe epilepsy, namely amygdale and temporal dysfunction (Barbieri, Lo Rusoo, Fracione, Scarone & Gambini, 2005), we may assume that the results obtained in this case shall be interpreted in this regard.

❖ Seizure management (control) – seizure management implies the frequency and acuteness of seizures.

The frequency of seizures may have double value for mental disorders during epilepsy. On one hand, frequent seizures lead to the changes in the central nervous system, and on the other – they facilitate personal changes in a patient, e.g. restriction of a sphere of interests.

The acuteness of a seizure implies both a type and frequency of seizures and - separately each of these fails to reflect the acuteness of the disease, which necessitates the consideration of both of these indicators.

❖ Type of seizures – behavioral disorders, including a chronic disorder and a variety of forms of psychic paroxysms induced solely by the source of epilepsy, localization of epilepsy, temporal, or a complex partial seizure (Hashimoto, 1994). The authors claim that the dysfunction of the temple area causes specific psychic disorders, such as irritation, aggressiveness and impulsiveness. These disorder are labile, easily inflammable and prone to drastic changes in mood (Gastaut, 1953). There is a set of characteristics typical of patients with temporal lobe epilepsy (Fedio, 1984; Hashimoto, 1994). The following point of view relating to temple localization is noteworthy: as limbic system is incorporated in the regulation of the emotional behaviors and the medial part of temporal lobes is one of the rings in the chain, it is possible that most of the emotional-personal disorders will manifest in patient with such an epileptogenic focus (Swinkels, Kuyk, van Dyck & Spinhoven, 2005).

Some studies attest to the presence of specific personal features in persons suffering from temporal lobe epilepsy.

Emotional changes may be conditioned by a *seizure* type. Namely, the rate of depression, psychasthenia and sometimes, the presence psychopathological signs is higher in patients with partial epilepsy rather than with those suffering from generalized epilepsy (Akada, Kugoh, Fukuma, Mino, Suwaki & Hosokawa, 1995).

- Polymorphic character of a *seizure* type – patients with a temporal lobe epilepsy often experience several types of a seizure; it has been established that the simultaneous presence of several types of seizures is more relevant for the emergence of emotional disorder in epilepsy than the type of seizure itself;
- Lateralization – some authors believe that the emergence of emotional-personal changes is not defined solely by a temporal lobe dysfunction only but is rather related to side of the hemisphere affected (DeVills & DeVills, 1986; Altshuler, 1991)

Presence of risk-factors associated with treatment has been acknowledged – patients suffering from epilepsy get high intake of anti-epileptic medicine, the so-called anti-convulsants. The latter may play a vital role in the etiology of psychopathology which develops during epilepsy. The intake of anti-convulsants for years causes neuro-physiological and metabolic complications (Trimble, 1989). The effect of cognitive functions of a patient varies from medicine to medicine.

Several variables relating to anti-convulsive treatment have been identified:

- Type of treatment (monotherapy/polytherapy);
- Concentration of a medicine in serum;

A specific psychosocial variable which may be related to psychopathology during epilepsy is well-known:

- Fear of seizure – stress accompanying the course of disease is the result of an incorrect perception of his/her own seizure by a patient (Mittan & Locke, 1982). The fear of seizure and its possible physical outcome is one of the main stimulators of disturbance, depression and other psychopathologies (Mittan & Locke, 1982). There is another side to the fear of seizure, which is linked to the social consequences of seizures. A patient knows that a seizure may take place at any time and under any circumstances. It is rather difficult to make any predictions in this regard (not all seizures are preceded by an aura). Therefore, he/she develops a fear of finding himself/herself exposed to the public in an 'undesirable' situation.
- Locus of control– people with epilepsy, who lose control over an important aspect of their life, develop an external control locus. Compared with healthy people and patients suffering from other diseases, they have a higher external locus of control. Apart from that, the link between a control locus and some properties of psychopathology and behavior are well-known. Some researchers point to the connection between an external control locus and epilepsy-induced psychopathology (Gramstad, Iversen, Berna, 2001).
- Subjective perception of a stigma – epilepsy and a person suffering from epilepsy is labeled to be different from patients affected by other chronic diseases. She/he is seen as a socially

unacceptable person on whom restrictions are imposed. A patient feels it as he/she is aware of the viewpoints prevalent in the public and is very sensitive to it.

Hence, the effect of the acuteness of a seizure on the perception of a stigma is mediated by individual features, such as the perception of discrimination, perception of restrictions caused by epilepsy, the level of education, age and gender (Baskind & Birbeck, 2005). According to this hypothesis, a person suffering from epilepsy is influenced by unique social and impersonal stress, which is the source of psychopathology emerging during epilepsy.

Despite a possible connection between some psychosocial variables (e.g. adjustment to epilepsy) and psychopathology, the nature of the cause and effect relationship remains vague and requires further research (e.g. longitudinal research). Apart from that, some psychosocial variables may be directly linked to epilepsy (e.g. a fear of seizures), while others can be the result of epilepsy as a disease (e.g. people suffering from epilepsy may have weak social support), or not be induced by epilepsy (e.g. a person suffering from epilepsy may have tense relations with his/her family members) (Hermann & Whitman, 1992).

Of note are the opinions held by some researchers, who claim that disease-related variables serve as a predictor of epilepsy as a disease, while socio-demographic variables, as well as the perception of his/her own self and his/her disease by a person shall be viewed as predictors of the personal condition of a person suffering epilepsy (Collings 1990).

Variety of mental disorders under epilepsy shall not be explained only from the biological point of view. Personal changes during epilepsy are conditioned by the interaction of a multitude of factors.

Effect of Epilepsy as a Chronic Disorder on a Patient's Personality

None of the aforementioned concepts separately is sufficient to explain a range of personal-emotional changes under epilepsy. Epilepsy is a chronic disorder and the diagnosis of this disorder may cause many problems. There is a high rate of stigmatization, social isolation, psychological problems, and interpersonal difficulties among people affected by epilepsies. Various medical (Duncan, 1990) and social (Thompson and Oxley, 1988) and psychological (Trimble, 1988, MeGuire and Trimble, 1990) factors influence the quality of life of people suffering from epilepsy.

The difficulties faced by a person with epilepsy may have different causes. Firstly, a course of disorder and the brain dysfunction may affect a person's abilities. Secondly, the type of treatment may also define the emergence of abnormalities, which, in their turn, eventually affect the quality of life of a patient. Thirdly, social attitudes may influence the quality of life of a patient. Discrimination against people with epilepsy, stigmatization and non-acceptance are also considered to create further complications. It can be assumed that psychic abnormalities are a result of difficulties encountered in the course of social adjustment, which is often caused by negative dispositions of a society towards the disease.

The response to his/her own disorder by a patient largely depends on his/her idea of epilepsy and on how the disorder is perceived by a patient. At the initial stage, the severity of the disorder is underestimated. The first seizures are seen by a patient as occasional incidents or are explained by exhaustion and other external factors. They almost ignore mild paroxysms and don't always follow doctor's instructions. Some patients refuse to maintain a special regime prescribed for them until they begin to experience frequent or convulsive seizures, while others exaggerate their condition and consider epilepsy as an incurable disease and have hypochondriac at symptoms. Thus, psychological response at the initial stage differs among patients.

Prediction and course of epilepsy, as well as of other chronic conditions, are also largely determined by external factors, working and leisure conditions, treatment process, etc. Under additional factors (psychic and physical trauma, infection, intoxication, exhaustion, etc) a chronic conditions complicates leading to the resumption of seizures following many years of absence. Harmful effect of external factors increases the rate of rare paroxysms, while positive effect leads to the reduction of the frequency and acuteness, or even disappearance, of seizures.

The compensatory condition rules out paroxysms, but still implies the presence of a certain "deficit". The latter means psychological changes (reduction of cognitive functions and EEG changes). In one group of patients the "deficit" is manifested in both indicators, while in others it finds reflection only in electrophysiology.

Projection of epilepsy is often related to the character and frequency of seizures. In some cases, the link does exist, while in others there is no connection. Some patients have rare seizures, but are subject to personal changes and therefore the chronic changes of persons are ascribed great importance in assessing the importance of the peculiarities of the course and projection of the disease. It is such changes that cause the reduction of working capacity and conflict with the society. They hinder the process of adjustment. Thus, it is not only the frequency and severity of paroxysms, the character of brain damage, level of intellect that need to be taken into account when assessing the prognosis of epilepsy, but rather a full clinical and psychopathological picture. As rightly noted by H. F. Spate, epilepsy is not merely a brain disoder, but rather a personal one (Trimble, Dodson, 1994).

There is another important factor affecting the course and the treatment of epilepsy, as well as the prognosis of a disorder and a person affected by epilepsy that needs to be taken into account. This is a vision of the disoder etiology in patients and people close to them. According to a popular public belief, epilepsy is inherited. From this viewpoint, epilepsy is conceived by patients and the people in their close circle as a fatal, inevitable disease, a verdict for the doomed. A person, according to the public, thus becomes censured and blemished. A patient loses hope in future and therefore gets secondary psychic and neurotic disorders and difficulties in his/her relationship with people (Iivanainen, Uutela & Vilkkumaa, 1980). An adequate picture of epilepsy will facilitate the evasion of complications. Apart from that, until recently, the knowledge of epilepsy was formed on the basis of the material obtained from psychiatric clinics. Since their population consisted of patients suffering from acute forms of epilepsy, epilepsy was

considered as a disease causing deep psychic disorders that required treatment at a psychiatric clinic, while only a small share of patients require hospitalization. Sometimes one seizure is enough for a person to be labeled as an "epileptic", which is followed by problems, especially in the social area (Awariatele, Longe & Awariatele, 1985).

It thus appears obvious that related literature provides conflicting data on the matter. Researchers have failed to agree on the nature and causes of the changes of personal-emotional sphere during epilepsy. Clinical observations and studies explain personal and emotional changes are caused either by biological, disease-related or psycho-social factors. There are only few studies which emphasize a multi-factor nature of the changes in personal and emotional sphere (Trimble, 1989, Hermann, Whitman, 1992).

Based on scientific literature, it can be assumed that personal changes during epilepsy can be conditioned by the following factors:

- Pre-morbid personal peculiarities of a patient;
- The process of disorder and different types of brain dysfunction, localization of the focus of epilepsy, the frequency and acuteness of seizures;
- Type and progress of treatment, the success/failure of which often has an impact on the quality of a patient's life;
- Compensatory capacity of the organism;
- Under various external factors, including the style of upbringing, the public attitude towards a patient and the his/her disorder, etc;
- Social attitudes, which may determine the change of the lifestyle of a patient: discrimination and stigmatization;
- Internal resources of a person, namely his/her stress reduction strategy;
- Mental image of the disease, which determines the attitude of a person towards his/her disorder.

Thus, it is not only the frequency and acuteness of paroxysms, the nature of brain disease and a personal intellect level that should be considered while assessing the prognosis of epilepsy, but rather a comprehensive clinical picture, of which, we believe, the mental image of the disease, is an important part. This is a phenomenon which unites the emotional disposition of a person to his/her disorder, himself/herself and the people around him/her.

Epilepsy is not merely a brain disorder, but rather a general disease of a person.

Goal and Objectives of the Research

The characters of personal-emotional changes emerging in the course of a chronic disorder largely define the success of a disorder. Apart from medication, psychological and psycho-social intervention is required; this calls for the definition of personal-emotional factors, which become apparent in the course of a chronic disorder. The treatment of a patient with a chronic disease should not imply disorder treatment only; rather, it should also envisage psychological assistance, which aims at an adequate social, professional and personal adjustment and rehabilitation. It is the analysis of the mental image that allows

planning an adequate psychological assistance tailored to the needs of a patient, as well as to detect and prevent possible complications in a timely fashion.

The structure of the mental image of the disease (or the disorder) is multi-factored. Its formation is facilitated by social, psychological and biological factors, which shall be taken into consideration in every individual case and their share is different. In this regard, we are interested in the kind of the mental image of temporal lobe epilepsy and how it is related to personal and behavioral properties. Which factors affect the mental image of the disorder and the type of response, respectively, biological factors, a person's relationship with the immediate social environment, or their combination?

The question is whether the types of responses to various chronic conditions differ from each other or they follow the same pattern defined by the chronic nature of the disorder. The topic is highly relevant in the light of the interests of contemporary medicine and clinical psychology. It can be assumed that both factors play a role in the formation of a mental image. Moreover, a mental image of the disorder must have an influence on the relationship with the outside world.

In the light with the aforementioned, the paper focuses on the investigation of the mental image of epilepsy as a chronic disorder. It also aims to establish whether it is psychological peculiarities typical of a chronic disorder or epilepsy as a pathological process that condition the disorder. Another notable aspect addressed in the paper is to define relationship during other chronic disorder, e.g. ischemic heart disease. Coronary heart disease is related to various types of dysfunction of heart arteries. It is clinically manifested in adults and includes stenocardia, myocardial infarction etc.

Despite the existing differences, these two conditions have much in common, namely: their chronic nature and a cardinal change of the lifestyle (strict regime to be followed, restriction of a physical activity, the need for a multi-year treatment, etc). Both conditions may, to a certain extent, be dangerous for life. Each of them is accompanied by the change of psycho-social life and can be considered as less predictable.

Research Goals:

- Analysis of factors affecting the mental image of the disorder;
- Establishment of links between the mental image of a disorder and the type of interpersonal relations during temporal lobe epilepsy;
- Definition of the characteristics of the type of response to the chronic disorder on the basis of comparing the groups of people suffering from temporal epilepsy and ischemic heart disorder.

Research Objectives:

1. Comparative analysis of mental image of disorder of patients suffering from temporal epilepsy and ischemic heart disorder;
2. Establishment of a link between the type of response to a temporal epilepsy to the disorder variables and personal properties;

3. Investigation of interpersonal relations of patients suffering from temporal epilepsy and ischemic heart disease and their comparative analysis;

4. Investigation of the link between the mental image of the disorder with the type of interpersonal relations among patients suffering from temporal epilepsy and ischemic heart disease and their comparative analysis.

Research Methods

The following psychological methods were applied to address the aforementioned tasks:

- a personal questionnaire developed by Bekhterev Institute and modified by us for the identification of the type of response to the disorder;
- Eysenck personality questionnaire for investigating the style of personal characteristics (EPQ);
- T. Lear's interpersonal diagnostics
- Beck Depression Inventory (BDI) for establishing the level of depression.

Clinical Characteristics

The survey covered 155 respondents, including 54 people with temporal lobe epilepsy, 31 with ischemic heart disease and 70 healthy persons.

Despite the difference between the two target groups selected by us (temporal lobe epilepsy and ischemic heart disease), these conditions have much in common: (i) chronic nature, disorder-induced drastic changes in life (strict regime, restriction of physical activity, need for a multi-year treatment, etc); (ii) both conditions can be considered dangerous for life; (iii) both are accompanied by changes in social life; (iv) both conditions can be considered as non-predictable.

The surveys were conducted at the Department of Epilepsy of the Sarajishvili Clinical and Experimental Institute of Neurology. Those surveyed included 29 women and 28 men with higher and secondary education. The mean age of the patients was 37. Three age groups were identified: those between 17-25, 26-37, 38 and above.

The patients differed from one another in terms of the side of the pathological focus being affected, the age of disorder onset, type and frequency of seizures, type of treatment (mono-therapy vs. poly-therapy) and etiological factors. The patients surveyed did not include those with deteriorated intellectual abilities, which would be established by means of a neuro-psychological investigation and status progress of the disorder among patients.

The patients with an ischemic heart disease were surveyed at the Institute of Cardiology. The number of patients equaled 31, included 15 women and 16 men. Their mean age was 47. A single age group of patients aged above 38 was identified. The age of disorder onset was also represented by a group of people aged above 21.

Control group included healthy 70 experimental subjects, with the mean age of 34. It was made up of 38 women and 32 men. Three age groups were identified, those between 17-25, 26-37 and 38 above.

Research Procedure: The procedure with the patients suffering from temporal epilepsy consisted of two phases. At phase 1 experimental subjects were participated in a neuro-psychological examination, which was to rule out psychiatric disorders of patients. In cases when no significant psychiatric disorders were found, patients completed in BDI for establishing their level of depression. At phase 2, a structured interview about the origin and progress of the disorder was held in order to differentiate the variables related to the disorder. Afterwards, patients were surveyed through a response questionnaire, Leary's diagnostic questionnaire for interpersonal relations and Eysenck's EPQ questionnaire.

The data obtained as a result of the surveys were processed by using SPSS 12.0 software. The following means of measuring were used for descriptive and summarizing statistics: arithmetic mean, deviation/probable error, the reliability of the difference between the mean indicators was verified by a T-test and Kruskal-Walls analysis. Dispersive and regressive analysis, as well as factor analysis (analysis of main components) was applied.

Analysis and Interpretation of the Survey Results

Persons suffering from temporal lobe epilepsy have shown a more vividly expressed sensitive-obsessive-phobic type, agitated-hypochondriac and ergopathic ("escape into the work/learning") type of response trends (***Table1)***. They have disorder related, groundless fears of different kinds. They suffer from the fear that the knowledge of the presence of the disorder/seizures will result in the unpleasant attitude in the people surrounding, due to which he/she will be considered an imperfect person, which will affect his professional career, relations with friends and therefore often they try to hide their disorder and not lag behind other in public life. Patients with temporal lobe epilepsy are more sensitive to others' opinion and evaluation (sensitive-obsessive-phobic type). Most of the patients note that they try to avoid talking about the disorder and its treatment with co-workers, classmates and neighbors. At the same time, they express their trust in their family members and often, in their close friends.

Table1. The type reaction of the disorder in the group of temporal lobe epilepsy

the type reaction of the disease	**Mean**	**SD**	**Max**
1.euphoric	2,54	1,978	8
2. agitated-hypochondriacally	5,56	2,799	13
3. sensitive-obsess-phobic	5,09	2,601	10
4. melancholic	1,69	1,911	6
5. harmonious	6,22	2,938	13
6. apathetic	1,26	1,944	11
7. paranoic	0,44	0,883	4
8. ergopathic	2,69	1,451	6
9. egocentric	1,15	1,379	4

According to them the perception of stigma is to be viewed as a subjective belief that epilepsy has a negative impact of the social interaction of a person. Despite the fact that most of the patients in this survey pointed out that they did not feel stigmatized, 70% of them stated they refused to discuss the disorder with others.

The support from the family reduces agitation and depression. The stronger and more adequate the support is, the less is the degree of a disorder-induced agitation and fears. There is a positive correlation between them: the growing fears result in the increase of depression and on the contrary (Kendall tab Coeff. =.355**, Sig (2-tailed) <.000). A sensitive-obsess-phobic type of response to the disorder is related to agitative-hypochondric type: the growth of interpersonal sensitivity related to the disorder causes increased agitation (Kendall taub Coeff. =.237*, Sig (2-tailed) <.020).

Along with that, the persons suffering from temporal lobe epilepsy surveyed by us reveal a tendency for the exaggeration of their disorder and are characterized by increased interest in their perceptions, have pessimistic attitude to the results of the disorder, the desire to search for additional information on the new treatment options and the disorder's features; they experience perturbation about the possible complications of their disorder, which, to their mind, will have a negative influence on the family and professional relations (perturbed-hypochondriac type). Perturbation may be caused or increased by the psychological responses which a patient develops to a non-predictability of seizures and dysfunction of the organism (Vasquez & Devinsky, 2003).

People affected by temporal epilepsy often try to strike internal balance by "escaping into work" and continuing working, sometimes even more intensely, despite the severity of the disorder. Some of them spend most of their spare time working hard, but continue treatment in parallel. Even in the case of losing a job and when unemployed they try to do something in order to escape thinking about the disease, at least partially, free them from its influence and obtain the feeling of their values (ergopathic type). Adults try to achieve self-assertion at work, and young people among friends, which explains a high rate of deviation from the treatment regime.

The surveys have shown that disorder response types (sensitive-obsesso-phobic and melancholic) can be conditioned by such variables as the frequency of seizures and the age of onset of the disorder (***Table2)***. The more frequent the seizures (per year), the higher is the likelihood of the tendency for the formation of a harmonious response type, which implies the "rejection of the role of a patient" and development of attitudes, which facilitate the improvement of physical condition, encourage the active support of treatment, adequate evaluation of his/her condition by a patient, and adjustment of his/her interests and goals to new circumstances.

Table2. The type reaction of the disorder and frequency of the seizures in the group of temporal lobe epilepsy

the type reaction of the disorder	*frequency of the seizures*	*M*	*SD*	*df*	*t*	*Sig (2-tailed)*
harmonious	• /year • /month	9,07 5,04	1,859 2,502	40	5,332	,000
harmonious	• /year • /week	9,07 5,50	1,859 2,991	24	3,613	,000
ergopathic	• /year • /week	3,29 1,50	0,825 1,269	24	4,186	,012
ergopathic	• /month • /week	2,79 1,50	1,572 1,269	38	2,324	,026

In the case of unreliable prognosis, it encourages the shift of interest to the spheres of life, which are still accessible to a patient. In the case of rare seizures, the rate of ergopathic response is also high. Rare seizures enable patients study/work normally despite the disorder. With the increase of seizure the lack of self- confidence increases and the behavior of the patients are more defined by disorder.

The question that arises with respect to the data obtained is as follows: to what extent does the frequency of seizures precondition the emergence of a specific type of a disorder response. The *regression* has shown that these neurobiological variables allow predicting the formation of the aforementioned types of the mental image of the disorder: the rarer are the instances of seizure, the higher is the probability of the development of an adequate response type and the desire/attempt to continue work/studies despite the disorder (Table3, Table4).

The r*egression* conducted allows us to assume that if the frequency of seizures are 2-3 per year, it influences the development of harmonic response (F=11.632, Sig<.001 and ergopathic (F=7.985, Sig<.007) types. Thus, the less frequent the seizures are the more objective and adequate the response of a patient to the disorder is. This is followed by the change of attitude of a patient to his/her disorder – improved self-assessment, reduced perturbation and enhanced social adjustment.

Table3.

	B	Std. Error	Beta	t	Sig.
(Constant)	9,746	1,096		8,893	,000
harmonious	-1,796	.527	-,428	-3,411	,001

Predictor: the frequency of seizures
Dependent variable: the harmonious type of the disorder

Table4.

	B	Std. Error	Beta	t	Sig.
(Constant)	4,171	,588		7,479	,000
ergopathic	-,757	,268	-,365	-2,826	,007

Predictor: the frequency of seizures
Dependent variable: the ergopathic type of the disorder

Sensitive-obsessive-phobic and melancholic types of response to the disorder are related to the onset of the disorder – the earlier the disorder starts, the higher is the rate (table5).

Table5. The type reaction of the disorder and the onset of the disorder in the group of temporal lobe epilepsy

the type reaction of the disorder	the onset of the disorder	M	SD	df	t	Sig (2-tailed)
Sensitive-obsessive-phobic	• 0-10 years • 11-20 years	6,28 4,19	2,803 2,4	37	2,506	,017
melancholic	• 0-10 years • 21< years	2,78 0,92	1,855 1,320	29	2,065	0.48

The research has shown the importance of gender on the type of response to the disorder (table6). A relatively objective perception of the disorder is more prevalent in men (harmonious type), while in women, it is certain indifference to the progress of the disorder, passive yielding, reduced number of interests on one hand, and "escape into illness", exposure of one's disorder with the aim of attracting interest to his/her own personality and demanding special attention because of the disorder (egocentric type) on the other, that is in evidence. This can be partly explained by the fact that the rate of depression is higher among women.

Table6. Sex difference on the type of response to the disorder in the group of temporal lobe epilepsy

gender/the type reaction of the disorder	male		female		df=52	
	M	SD	M	SD	t	Sig(2-tailed)
harmonious	7,04	2,919	5,46	2,795	2,0624	,048
egocentric type	0,58	1,027	1,68	1,467	-3,174	,003

In female patients with right lateralization of epileptic focus an apathetic type of response is possible (F=3,877, Sig<.027). The factor of lateralization itself does not have any impact on the type of response. Also, in female patients, the likelihood of egocentric response is high (F=10.623, Sig<.002). The probability in this case increases further if it is complimented by a factor of lateralization ((F=8.221, Sig. <.001).

Thus, gender and epileptic focus lateralization jointly have an influence on the formation of the type of response – in female patients with temporal epilepsy apathetic and egocentric types of response are more predictable in the case of right localization of an epileptic focus.

Persons with ischemic heart disease are more characterized by perturbed- hypochondriacal type of response (table7). They keep thinking about the dangerousness of the disorder and ineffectiveness of the treatment, as well as a deplorable outcome of treatment, focusing attention on their subjective perceptions and exaggeration of the disorder.

Table7. The type reaction of the disorder in the group of ischemic heart disease

the type reaction of the disorder	Mean	SD	Max
1.euphoric	1,87	2,391	8
2. agitated-hypochondriacally	6,68	3,187	12
3. sensitive-obsesso-phobic	3,06	1,711	7
4. melancholic	1,71	1,936	6
5. harmonious	6,06	2,351	10
6. aphatic	0,57	0,81	3
7. paranoic	0,23	0,497	2
8. ergopathic	2,30	1,140	4
9. egocentric	1,23	1,117	3

In persons with ischemic heart disorder, as well as in the groups of patients with temporal epilepsy, response types differed according to the gender of patients (table8). Men display a more positive mood

devoid of the objective perception of the reality. There are more instances of regime violation, irregular treatment, putting symptoms down to accidental instances (euphoric-anosognostic type). In women the feeling of despair, pessimism and depression are more in evidence (melancholic type of response). Women also tend to focus interest on their own perception, to exaggerate them and thus attract attention (egocentric type).

Table8. Sex difference on the type of response to the disorder in the group of Ischemic heart disease

the type reaction of the disorder	*male*		*female*		
	M	SD	M	SD	
euphoric	2,8	2,43	1,	2,066	F=4,969 Sig.<0,034
melancholic	0,93	1,223	2,44	2,22	F=5,354 Sig.<,028
egocentric	0,67	0,9	1,75	1,064	F=9,3 Sig.<,005

The methods of *regression* were used to verify the predictability of the development of these types of response in patients with ischemic heart disease. It is possible to predict that men develop euphoric type of response (F=4,969, Sig=.034). In female patients, the likelihood of developing a melancholic (F=5.354, Sig=.028) or egocentric (F=9.300, Sig<.005) type of response to the disease is high.

As compared to patients with ischemic heart disease, patients with temporal lobe epilepsy more strongly display fears of the social consequences of the disorder (t=3.781, df=81, Sig(2-tailed)<.000) - persons with temporal lobe epilepsy are more sensitive to the attitudes of the people around. The fear that others may learn about their disorder and that it will have a negative effect. To them others' opinions matters. Their fears are of social character, which can be explained by a stigmatizing nature of epilepsy (high rate of sensitive-obsesso-phobic response type).

Control groups did not display any of the types, which is natural in the case of presence of the objective disorder.

***Conclusions*:**

- Persons with temporal epilepsy develop a certain attitude towards their own disorder. They display a higher rate of anxious-hypochondriacal, sensitive-obsesso-phobic and ergopathetic types;
- In the case of temporal epilepsy, a type of response is determined by such variables as the frequency and duration of seizures;
- A group of patients with temporal epilepsy displayed the following predicate factors that determine the emergence of a mental image of the disorder:
  - Frequency
  - Disorder onset
  - Gender and lateralization
- In patients with ischemic heart disease anxious-hypochondrial type of response to the disorder prevails.

- In patients with ischemic heart disorder gender of patients determined the formation of a mental image of the disease.
- In persons with temporal lobe epilepsy and in persons with ischemic heart disorder types of response differed according to gender.
- As compared with persons with ischemic heart disorder, persons with temporal lobe epilepsy more strongly display fears related to the social consequences of the disorder.
- None of the response types was revealed in healthy persons.

In terms of social relations the following types have been revealed:

Persons with temporal lobe epilepsy strive towards closer, friendly relations (table9). They find it difficult to express their feelings, but are characterized by a high sense of responsibility (shy-obedient). On the other hand, they display hypersensitivity to the influence of the society (cooperative-conventional). They are direct with people around them and seek close relations and appreciation.

Table 9. The type of the interpersonal relations in the group of temporal lobe epilepsy

the type of the interpersonal relations	Mean	SD	Max
1. authoritative- leader	6,39	3,779	15
2. independent- dominant	6,81	3,481	14
3. straightforward- aggressive	6,80	2,506	12
4. distrustful- skeptical	5,85	2,688	13
5. modest- dependent	7,70	3,374	16
6. obedient	6,48	3,020	14
7. cooperative-conventional	8,31	3,261	14
8. responsible-thoughtful	7,65	3,127	15

In a group of patients with temporal lobe epilepsy the nature of interpersonal relations was influenced by the following variables: frequency of seizures and the age of disorder onset. The rarer the instances of seizure, the greater is the tendency for developing responsible-thoughtful (eighth octant) style of interpersonal relations (t=2.062, Sig (2-tailed) <.046). Patients with rarer seizures are characterized by a high sense of responsibility and readiness to give help to the people around them. There is a higher rate of obedient type of interpersonal relations (the sixth octant) in patients who displayed the disorder at a later age (above the age of 21). They are characterized by the need for recognition, confidence and help from others. Also, often they manifest feebleness and inability offer resistance to others.

The types of interpersonal relations in patients with temporal epilepsy differed according to gender: men showed higher rate of independent-dominant (second octant) (F=12.931, Sig<.001), linear-aggressive (the third octant) (F=15,200, Sig (2-tailed) <.000) and dependent-obedient (the sixth octant) (F=6.295, Sig<.015) types; men seek dominance over others, are determined and at the same time, seek recognition.

In interpersonal relations, healthy persons tend to undertake others' duties, build friendly relations and cooperate. At the same time, they seek independence, and often display aggression, are conflicting

and strive for dominance. They try to achieve a dominant position and protect themselves from people hostile to them on one hand and maintain positive response from others, on the other, which becomes apparent in their thoughtfulness and cooperation.

Among healthy subjects, men show statistically higher true rate of skeptical type (F=5.078, Sig<.027), while women display domineering-obedience (F=8.519, Sig<.005) factor.

Regression has allowed us to assume that sex has a predicting value for developing these types of interpersonal relations among people with temporal epilepsy, as well as among healthy subjects.

Age differences in interpersonal relations among patients with temporal epilepsy and control groups are of great relevance.

Persons with temporal lobe epilepsy display age differences in terms of the types of interpersonal relations – at young age (between 17-25) interpersonal relations are dominated by a tendency towards obtaining power and control over others, as well as increased attention to one's own opinions and minimum regard to those of others. Healthy subjects displayed the same tendencies, though in the first case they are more pronounced.

Patients with ischemic heart disease also display shy/obedient (the fifth octant), cooperative-conventional (the seventh octant) and responsible-thoughtful (the eighth octant) types – they characterize themselves as shy, reserved persons. At the same time, they seek to build close friendly relations and are sociable.

Conclusion:

- Persons with temporal lobe epilepsy display a shy-obedient and cooperative-conventional style of relations;
- In a group with temporal lobe epilepsy, interpersonal relations are influenced by the following disease variables: frequency of seizures, the age of disease onset and a type of treatment;
- Patients with ischemic heart disease also display shy-obedient, cooperative-conventional and responsible-thoughtful types of relations;
- Sex differences in types of interpersonal relations were revealed;
- Age differences in types of interpersonal relations were revealed;
- In terms of interpersonal relations, persons with temporal lobe epilepsy are more sensitive to the attitudes of the people around them.

In terms of depression indicators, the following has been revealed:

There is a high rate of depression among persons suffering from various disorder and patients with epilepsy do not make an exception to the rule.

It is regarded that persons with temporal epilepsy are characterized by a high rate of depression. The interest of the left hemisphere of the brain in the emergence of depression symptoms has also been noted. In our research the rate of depression reached a medium value. It is not conditioned by the lateralization of an epileptic focus, but is rather related to the frequency of seizures. The more frequent

seizures are, the higher the rate of depression is. This is further supported by other studies (Hermann, 1990; Robertson, 1991). The number of seizures is directly linked to the increased rate of depression. Frequent seizures point to the inability of reducing depression, which is an indicator of ineffective treatment. Frequent seizures increases disorder-induced stress in a patient, which is related to the development of depression (Hayden et al., 1992). In the survey conducted the patients noted the link between stress and seizure control.

Apart from that, *regression* of data from a group of patients with temporal lobe epilepsy allowed us to identify the following factors related to the depression indicator: an indicator of psychoticism, type of interpersonal relations (skeptical), melancholic and harmonious types of interpersonal relations and sex. Women with temporal lobe epilepsy are more prone to depression. The higher the value of psychoticism, the higher is the probability of depression in persons displaying a melancholic type of disease response. The more pessimistic is a person about his/her disease, the higher is the likelihood of depression. The link between a pessimistic attitude to the disorder by a patient and depression is discussed in the research by Hermann, Trenerry and Colligan, (1996).

At the same time, there is a negative correlation between depression and a harmonious type of disorder response. The weaker the latter, the higher the level of depression. Also, the more skeptical a patient is (skeptical type of relations), the higher is the rate of depression.

The results obtained as a regression allows us to assume that in patients with temporal lobe epilepsy depression is caused by psychological factors rather than the disorder. Depression is a result of changes caused by the disorder and the exchange the patient's lifestyle, the increase self-effacing.

Similar tendencies, though with slight differences, can be observed in the group of persons with ischemic heart disease. The following factors related to depression have been revealed: a certain type of interpersonal relations (power-leadership and skeptical) and melancholic and harmonious types of disorder response. The rate of depression is also higher in women. Similar connections in the groups of persons with temporal lobe epilepsy are more evident with respect to melancholic and harmonious types of disorder response. The likelihood of depression is higher if a patient is over skeptical about the development around him/her (skeptical type). The less confident a patient is in himself/herself, the higher is the rate of depression (in the case of a low rate of power-leadership type of relations).

In addition to this, we may also suggest that a medium rate of depression in the target group (patient with temporal lobe epilepsy) is conditioned by the fact that intake of Carbamazepin by most patients, and as confirmed by studies (Trimble, 1989), it has the effect of an antidepressant. However, we did not receive statistically true data to support the proposition.

Conclusions:

- People with temporal lobe epilepsy are characterized by a medium level of depression accompanied by a high level of anxiety, and lack of self-confidence.
- In patients with ischemic heart disease depression is of medium value;

- A set of factors stimulating depression have been identified. These factors do not differ markedly between persons with temporal epilepsy and those with ischemic heart disease:
  - Melancholic type of disorder response;
  - Harmonious type of disorder response;
  - Lack of self-confidence and skepticism in interpersonal relations.
- The causes of depression in the group of patients with temporal lobe epilepsy and in the one with patients with ischemic heart disorder are of a psychological character.

The testing by means *of EPQ* did not reveal a type expressed on the scale of extraversion/introversion – the indicators on this scale are the same in all three groups.

Correlation analysis has shown that neuroticism is related to the indicators of the inner picture of the disease, while psychoticism, to those of interpersonal relations. This is more evidence in the groups of patients with temporal lobe epilepsy. The higher the rate of neurotism, the higher is the rate of anxiety of disorder response. Also, the higher the rate of psychoticism, the higher is the likelihood for non-conformist, sometimes confrontational behavior, which is related to the problem of impulse control.

Character of interdependence between a disease response type and interpersonal relations:

Persons with temporal lobe epilepsy show a statistically significant positive correlation between a disease response type (euphoria-anosognosia, anxious-hypochondriacal, melancholic, apathic, ergopathic, and egocentric) and non-conformist, often conflicting tendencies in interpersonal relations (the third and fourth octants) and between the tendencies of striving for independence, leadership and dominance (the first and second octants). This correlation has a double nature.

We cannot prove a cause and effect relationship between a disorder response type and a type of interpersonal relations – there is only a two-way correlation. However, it is also to be noted that such a connection also cannot be ascertained among patients with ischemic heart disease and healthy persons.

There is a correlation between a disorder response type and a depression rate. The correlation is apparent in both groups: harmonious and ergopathic types of a disorder response are in negative correlation with a depression rate, while anxious types of a disorder response show a positive correlation.

Neurotism characteristics, revealed according to EPQ, in the clinical groups correlated with a disorder response type: the higher the level of neurotism, the higher an anxious and melancholic type of a disorder response, while ergopathic and harmonious types are more expressed in cases when the rate of neurotism is low (see the Appendix).

Results of factor analysis:

Considering the data obtained, it is essential to identify factors/component which lie at the basis of these peculiarities. With this aim, we used a factor analysis (a method of main components).

In groups with temporal lobe epilepsy and ischemic heart disease, factor analysis yielded the possibility to identify a number of factors, which show a certain similarity with one another: in both

groups the first factor is dominated by an anxious type of a disorder response; the second and third factors unite the main types of interpersonal relations, which reveal a certain ambivalence, especially in the case of persons with temporal lobe epilepsy. The latter are characterized by a strong desire to develop friendly relations and seek appreciation, but at the same time have a low self-concept, high emotional response to external irritants and a resulting fear of establishing close relations.

Factor analysis allowed us to identify five factors in the group of patients with temporal epilepsy. The first factor included the following indicators:

- Sceptical type of interpersonal relations
- Depression indicator
- Neuroticism indicator
- Anxious-hypocondriacal type of a disorder response
- Sensitive-obsessive-phobic type of a disorder response
- Melancholic type of a disorder response
- Egocentric type of a disorder response

The second factor united the following indicators:

- Independent-dominant type of interpersonal relations;
- Power-leadership type of interpersonal relations;
- Linear-aggressive type of interpersonal relations;
- Dominance-obedience factor
- Benevolence-enmity
- Euphoria-anosognostic type of a disorder response
- Sex

The third factor:

- Shy-obedient type of interpersonal relations
- Responsible-thoughtful type of interpersonal relations
- Cooperative-conventional type of interpersonal relations
- Dependent-obedient type of interpersonal relations
- Benevolence-enmity factor
- Rate of extraversion
- Harmonious type of a disorder response.

The fourth factor:

- Extraversion
- Apathic type of a disorder response
- Ergothentric type of a disorder response
- Sex
- Lateralization

- Seizure frequency.

The first factor united indicators, which are characterized by a high level of anxiety. The second factor basically has types of interpersonal relations, which are prone to domination, independence and sometimes, desire for obtaining power, [ignorance of a disorder and its consequences, sex factor]. The third factor brings together types of interpersonal relations, which are characterized by established concessional relations, an objective perception of one's own disorder and extraversion. The fourth factors unites clinical signs of a disease, personal characteristics and a dual perception of oneself, full indifference to a disorder and its consequences and exposure of a disorder and focusing on one's own personality. The first and fourth factors show a positive correlation, which means that the increase of one of them will lead to the increase of the rest. The connection between the second and third factors is not so straightforward: there are sex differences in the style of interpersonal relations and the reduction of the rate of psychoticism leads to the formation of a dependent type of relations.

In addition to this, there are certain connections between the factors. It is more apparent between the second and fourth factors, which allow us to assume those disorder variables, such as lateralization of epileptic focus, seizure frequency and personal properties, such as sex and a level of extraversion, apathetic and egocentric types of a disorder response result in the formation of a dominant style.

In the group of patients with ischemic heart disease factor analysis allowed identication of the four following factors:

The first factor unites the following indicators:

- Depression level
- Melancholic type of a disorder response
- Euphoric-anosognosic type of a disorder response
- Anxious-hypocondriacal type of a disorder response
- Ergopathic type of a disorder response
- Egocentric type of a disorder response
- Power-leadership type of interpersonal relations
- Sceptical type of interpersonal relations
- Responsible-thoughtful type of interpersonal relations
- Rate of neuroticism
- Sex

The second factor:

- Linear-aggressive type of interpersonal relations
- Benevolence-enmity factor
- Dependent-obedient type of interpersonal relations
- Cooperative-conventional type of interpersonal relations
- Deception indicator

- Sensitive-obsesso-phobic type

The third factor:

- Power-leadership type of interpersonal relations;
- Shy-obedient type of interpersonal relations;
- Domination-obedience factor
- Benevolence-enmity factor
- Indicator or extraversion

The fourth factor:

- Linear-aggressive type of interpersonal relations;
- Sensitive-phobic type of a disorder response;
- Indicator of psychotism
- Indicator of extraversion
- Indicator of neurocentrism
- Age groups

The correlation among the indicators united in the factors outlined in respect with the persons suffering from ischemic heart disease is not as straightforward as in the case of persons with temporal lobe epilepsy. The indicators of the first factor show both a positive and a negative correlation. Also, the connection of a depression indicator with sex and disorder response types is apparent: on one hand, the increase of a depression indicator causes the increase of anxiety towards the disorder and stimulates thoughts about the unsuccessful treatment and thus shifts a patient's focus on his/her own personality and leads to the decrease of the level of manifestation of leadership interperpersonal relations. On the other hand, the reduction of depression often results in the improvement of mood and active involvement in work, which often leads to the violation of the treatment. The stronger the striving for domination, the more apparent is the disregard of the disorder and the desire to escape into work. This factor is dominated by a depression rate with anxiety and striving for power associated with it. The indicators united under the second factor reflect a benevolent, concessional style of interpersonal relations and increased anxiety about the disorder. The indicators under the third factor represent the connection between the style of interpersonal relations and an indicator of extraversion. The more apparent the latter is, the higher is their desire to hold a dominant position in the society. The fourth factor mostly unites personal characteristics of a patient, as well as the age and an anxious type of a disorder response.

The following three factors were identified in the group of healthy people:

The first factor: unites types of interpersonal relations only

The second factor:

- Depression indicator
- Anxious-hypocondriacal type of a disorder response
- Sensitive-obsesso-phobic type of a disorder response

- Melancholic type of a disorder response
- Paranoiac type of a disorder response
- Indicator of neurocentrism

The third factor

- Harmonious type of a disorder response
- Ergopatic type of a disorder response
- Dependent-obedient type of interpersonal relations
- Cooperative-conventional type of interpersonal relations
- Responsible-thoughtful (altruistic) type of interpersonal relations
- Benevolence-enmity factor

The factors in the group of healthy subjects appeared to be most unambiguous. The first factor united the indicators of interpersonal relation. The connection among them reflects the test results obtained. The correlation with sex has been confirmed. The second factor has response test indicators, which, in the absence of an objective disorder, should not be considered reliable, [depression and neurocentrism indicator]. The third group brings together the characteristics of a friendship style and an objective perception of one's own disorder.

In patients with temporal lobe epilepsy and ischemic heart disease two factors reveal similarities (the first and second factors). Both are dominated by an anxious type of a disease response and general ambivalence in interpersonal relations. However, some qualitative differences can still be noted. Characterized by factors of friendliness, the behavior of the patients with ischemic heart disease appears more constructive, while patients with temporal lobe epilepsy are more dramatic, which is due to clinical changes of the disease (see Appendix 6,7).

In addition to the aforementioned, the connection within the factors is essentially different.

Conclusions:

1. The anxious–hypochondrical and sensitive-obsessive-phobic types with respect to the reaction to their illness are distinguished among patients with temporal lobe epilepsy and cardiac ischemic disorder, in comparison to healthy individuals. Simultaneously, among individuals with epilepsy sensitive-obsessive-phobic type of reaction to the disorder is statistically higher than the individuals with cardiac ischemia. It indicates that despite similar chronic disorder and dangers connected to them, fear, suspicion, concern about one's own health condition, about the attitude of their relatives and feelings about one's own helplessness are all more distinctive among individuals with epilepsy.
2. The main peculiarity of the reactions to the disorder of persons with temporal lobe epilepsy is a fear of social consequences (1), due to which patients are hypersensitive in their interpersonal relations.

3. In patients with ischemic heart disease the main characteristic of the reactions to the disorder is an anxiety as result beliefs that this disorder is very dangerous.

4. In persons with temporal lobe epilepsy the subjective perception of a disorder has an effect on the clinical variables of epilepsy, such as the age of onset, seizure frequency and personal characteristics of neuroticism:

    - frequency of seizures – the less the frequency of seizures is, the higher is the chance for developing the harmonic and ergopathic types of reaction to the disorder; patient more adequately evaluates the disorder, its exposure, will work together with the doctor to overcome it and continues life (works/learns) under the circumstances changed by the disorder.

    - age when the disorder occured/its duration – the earlier the disorder has revealed itself (the longer its duration), the higher is the chance for developing obsesso-phobical type of recation to the disorder. Patients have less faith in recovery and develop fear that their disorder had become annoying to the people around and they themselves are a burden for many years. They develop a visible feeling of deficiency and fear of final failure (family, job)

    - lateralisation of focus of epilepsy (together with the sex of patient) – the factor of lateralisation separately does not affect the type of reaction to the disorder. However, together with sex it determines development of certain types of reaction to disorder; when a patient is a woman, and she has the right lateralisation of epileptic focus, there exists high porbability that she might develop an apathetic type of reaction to disorder. The chances are also high that a female patient might develop an egocentric type of reaction to disorder; and if the lateralization factor is added the probability for this type of reaction to disorder becomes even higher.

    - neuroticism/ psychoticism – this constitutional indicator of disorder of human being is in negative corellation with types of reaction to the disease. The more emotionally steady and stable the patient is, the more are chances for developing adequate (harmonic) and work-oriented (ergopatic) types of reaction to the disorder.

5. Interpersonal relations of persons with temporal epilepsy are marked by hypersensitivity to external stimuli and expressed ambivalence – they are characterized by a desire to establish close relations on one hand and a fear of being rejected because of their disorder, on the other.

6. In the group of the patients with temporal lobe epilepsy, the types of interpersonal relations are affected by the following variables: seizure frequency, the age of disorder onset and type of treatment.

7. Individuals with cardiac ischemic disease, in comparison to the ones with temporal lobe epilepsy, are characterized with a more distinguished desire to socialize and establish friendly relationships with people around them.

8. The research has revealed that both groups develop shy-submissive, collaborative-conventional, and, in the case of cardiac ishemic disease, responsible-understanding types. Patients reveal restraint in relation to others, at the same time they attempt to establish close, friendly relation with people around; in case of temporal lobe epilepsy this ambivalence is more evident due to the fact that, in this group, relationship with environment is influenced not only by variables of the disorder, buit also by the constitutional variables of the patient himself: neuriticism/ psychotism, frequency of seizures and duration of disorder. The connection of similar type is not found among the patients with cardiac ishemic disease.

9. Basically healthy individuals, in comparison to the ones with temporal lobe epilepsy and cardiac ischemic disease, reveal more dominant tendencies in their relations with environment and are more aware of their own abilities.

10. Individuals with temporal lobe epilepsy reveal significantly higher evidence of neuroticism in comparison to the patients with ischemic heart disease. It points to the more clearly distinguished emotional instability, anxiety, longing for interpersonal relations, tendency to depressive reactions and decreased level of adaptation among the individuals with temporal lobe epilepsy.

11. The evidence of depression is statistically higher in the group of patients with temporal lobe epilepsy and ischemic heart disease, in comparison to healthy people.

12. The research results were applied to developing recommendations the consideration of which in medical, psycho-correctional and rehabilitation practices, will increase the effectiveness of treatment.

The data obtained allowed us to assume that a chronic nature of a disorder is not the only and the main factor shaping the mental image of it. It is rather a result of the influence of multiple factors. Following the assessment and analysis of the data the following model of the mental image of the disorder was devised: the formation of the mental image is influenced by the clinical characteristics of the disorder (i) (seizure frequency, the age of disorder onset and lateralization), characteristics of temporal lobe epilepsy as a chronic disorder (ii) (fears associated with the social consequences of the disorder), and partly the type of interpersonal relations (iii), which, in turn, depends on the pre-morbid type personality (iv). Interpersonal relations have another side. In some cases, the mental image of a disorder conditions the style of interpersonal relations. This difference is defined by the complexity of the problem and subjective and objective severity of the disorder.

The mental image of the disorder is one of the most important factors in the case of a chronic disorder. Adequate perception of the disease greatly contributes to the success of the treatment and

conditions the level of social adaptation, which ultimately becomes reflected on the quality of life. Therefore, epilepsy should be considered as a condition, which is crucial for the treatment and psychological correction of early treatment. This makes it possible to develop several approaches which, if applied to epilepsy and temporal lobe epilepsy in particular, would increase the treatment effectiveness:

- management of anxiety following the start of seizures;
- provision of information on the disorder, its progress, results of treatment and social implications;
- reduction of fear associated with the social consequences of the disorder;
- formation of an adequate/objective attitude to the disorder;
- training aimed at improving social skills.

Practical Importance of the Research

First, in the clinical history of temporal lobe epilepsy a model of a mental image of the disorder was used to contribute to the better understanding of personal-emotional changes associated with a chronic disorder and their prevention.

In order to appropriately plan a corrective measure, a clinical psychologist should be fully informed on the attitude of a patient to the disorder; its symptoms and a patient's disposition to his/her own abilities. The proper definition of a mental image of a disorder will contribute to the effective implementation of the goals since the formation of an adequate image will help achieve the success of treatment. Influencing the mental image of the disease, it becomes possible to form an adequate attitude to the disease, treatment, to oneself and the surrounding people and thus the attainment of positive dynamics. It allows defining the disease and predicting its treatment to a certain extent. It will also enable to avoid numerous complications. A person develops a higher level of disorder acceptance: he/she keeps strictly to treatment strategies and together with a doctor takes active measure to reduce seizures (keeping a special regime, taking medicine, etc), which, especially in the case of successful treatment, increases a patient's trust in his/her own abilities and improves his/her social adjustment. The data obtained as a result of the research can be used in the rehabilitation of patients with temporal lobe epilepsy, especially at an early stage.

The research will contribute to the study of the style of the attitude to the disorder taken by a patient and his/her interpersonal relations in the case of temporal lobe epilepsy, which will be a precondition of developing effective tactics of clinical and psychological treatment.

The results of the research can be applied in diagnostic, treatment and rehabilitation work, especially at an early stage of onset. These will allow development of individual corrective programs for patients with temporal lobe epilepsy. The research was an attempt to identify the main factors that would allow timely defining of the difficulties and of avoiding them with adequate involvement.

The results of the research allow prediction of the possible presence of personal-emotional problems, which allows development of schemes of individual corrective intervention for patients with

temporal lobe epilepsy. On the recommendations developed from this, epileptologists and psychologists can assist a patient in better accepting his/her disorder and treatment, which is a vital precondition for increasing the recovery of patients with epilepsy.

Scientific Novelty of the Research

Although temporal lobe epilepsy has many times been the focus of interest of psychologists, neuropsychologists and clinicans, it is only for the first time that it has been addressed in Georgia with a special emphasis on its chronic character.

A mental image of the disease associated with temporal lobe epilepsy, as a chronic disorder, and its interaction with chronic-related variables and the type of interpersonal relations has for the first time become the subject of study. The main properties of the phenomenon, its clinical and psychological correlates, have been investigated. The research also attempts to study the interaction of personal and clinical properties during the formation of a mental image of the disorder in the case of temporal lobe epilepsy.

A model of a mental image of the disorder, which has been devised for temporal lobe epilepsy, reflects the basic principles of its formation and enables researchers to conduct an analysis of the interaction between the mental image and other factors (personal characteristics, the type of interpersonal relations and clinical properties).

In general, neither a chronic character of the disorder (long duration), nor the clinical properties, nor its possible social consequences separately may define the type of the mental image of the disorder and serve as a main factor of disease formation – the patient's formulation of their disorder. These factors together contribute to the shaping of the mental image of the disorder.

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Appendix№1.

Variable of the depression. The comparison the groups of the temporal lobe epilepsy, ischemic heart disease and healthy people.

Descriptives

Beck

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval fo Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Epilepsy	52	17.67	11.424	1.584	14.49	20.85	0	50
Heart Disease	31	15.45	6.617	1.189	13.02	17.88	4	37
Norma	70	10.81	8.491	1.015	8.79	12.84	0	41
Total	153	14.08	9.740	.787	12.53	15.64	0	50

ANOVA

Beck

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1476.190	2	738.095	8.554	.000
Within Groups	12943.705	150	86.291		
Total	14419.895	152			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Beck

Tukey HSD

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Epilepsy	Heart Disease	2.221	2.108	.544	-2.77	7.21
	Norma	6.859*	1.701	.000	2.83	10.88
Heart Disease	Epilepsy	-2.221	2.108	.544	-7.21	2.77
	Norma	4.637	2.004	.057	-.11	9.38
Norma	Epilepsy	-6.859*	1.701	.000	-10.88	-2.83
	Heart Disease	-4.637	2.004	.057	-9.38	.11

*. The mean difference is significant at the .05 level.

Appendix№2.

The type of the interpersonal relations. The comparison the groups of the temporal lobe epilepsy, ischemic heart disease and healthy people.

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
leary I	Epilepsy	52	6.46	3.801	.527	5.40	7.52	0	15
	Heart Disease	31	5.10	2.982	.536	4.00	6.19	1	12
	Norma	70	8.60	2.428	.290	8.02	9.18	3	14
	Total	153	7.16	3.357	.271	6.63	7.70	0	15
Leary II	Epilepsy	52	6.87	3.470	.481	5.90	7.83	0	14
	Heart Disease	31	7.23	1.995	.358	6.49	7.96	2	12
	Norma	70	8.30	2.324	.278	7.75	8.85	3	14
	Total	153	7.59	2.778	.225	7.15	8.04	0	14
Leary III	Epilepsy	52	6.85	2.492	.346	6.15	7.54	0	12
	Heart Disease	31	7.81	2.242	.403	6.98	8.63	3	13
	Norma	70	7.47	2.289	.274	6.93	8.02	3	12
	Total	153	7.33	2.364	.191	6.95	7.70	0	13
Leary IV	Epilepsy	52	5.98	2.638	.366	5.25	6.72	1	13
	Heart Disease	31	6.03	2.168	.389	5.24	6.83	2	10
	Norma	70	6.69	2.429	.290	6.11	7.26	0	11
	Total	153	6.31	2.461	.199	5.92	6.71	0	13
Leary V	Epilepsy	52	7.77	3.416	.474	6.82	8.72	0	16
	Heart Disease	31	8.16	2.339	.420	7.30	9.02	3	13
	Norma	70	7.16	2.124	.254	6.65	7.66	3	12
	Total	153	7.57	2.685	.217	7.14	8.00	0	16
Leary VI	Epilepsy	52	6.50	3.020	.419	5.66	7.34	1	14
	Heart Disease	31	6.71	1.865	.335	6.03	7.39	3	10
	Norma	70	7.94	2.449	.293	7.36	8.53	2	13
	Total	153	7.20	2.634	.213	6.78	7.62	1	14
Leary VII	Epilepsy	52	8.31	3.311	.459	7.39	9.23	2	14
	Heart Disease	31	10.19	2.664	.478	9.22	11.17	5	15
	Norma	70	8.41	1.952	.233	7.95	8.88	4	13
	Total	153	8.74	2.712	.219	8.31	9.17	2	15
Leary VIII	Epilepsy	52	7.60	3.076	.427	6.74	8.45	0	15
	Heart Disease	31	9.77	2.291	.411	8.93	10.61	3	14
	Norma	70	8.89	2.417	.289	8.31	9.46	4	14
	Total	153	8.63	2.743	.222	8.19	9.07	0	15
Leary Agression	Epilepsy	38	.332	8.3983	1.3624	-2.429	3.092	-20.5	14.8
	Heart Disease	30	.080	5.8277	1.0640	-2.096	2.256	-12.7	16.6
	Norma	60	2.237	5.7587	.7434	.749	3.724	-10.9	13.0
	Total	128	1.166	6.6887	.5912	-.004	2.336	-20.5	16.6
Leary Friendly	Epilepsy	38	1.766	8.8604	1.4373	-1.147	4.678	-19.6	16.4
	Heart Disease	30	6.063	6.5839	1.2021	3.605	8.522	-3.9	24.3
	Norma	60	2.212	5.4779	.7072	.797	3.627	-13.4	16.7
	Total	128	2.982	7.0482	.6230	1.749	4.215	-19.6	24.3

Appendix №3.

The type of the interpersonal relations. The comparison the groups of the temporal lobe epilepsy, ischemic heart disease and healthy people.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Leary I	Between Groups	302.482	2	151.241	16.085	.000
	Within Groups	1410.433	150	9.403		
	Total	1712.915	152			
Leary II	Between Groups	66.699	2	33.349	4.522	.012
	Within Groups	1106.177	150	7.375		
	Total	1172.876	152			
Leary III	Between Groups	20.609	2	10.305	1.864	.159
	Within Groups	829.051	150	5.527		
	Total	849.660	152			
Leary IV	Between Groups	17.907	2	8.953	1.487	.229
	Within Groups	903.034	150	6.020		
	Total	920.941	152			
Leary V	Between Groups	24.834	2	12.417	1.740	.179
	Within Groups	1070.696	150	7.138		
	Total	1095.529	152			
Leary VI	Between Groups	71.560	2	35.780	5.459	.005
	Within Groups	983.159	150	6.554		
	Total	1054.719	152			
Leary VII	Between Groups	82.641	2	41.321	5.989	.003
	Within Groups	1034.901	150	6.899		
	Total	1117.542	152			
Leary VIII	Between Groups	100.740	2	50.370	7.244	.001
	Within Groups	1043.024	150	6.953		
	Total	1143.765	152			
Leary Agression	Between Groups	130.619	2	65.310	1.471	.234
	Within Groups	5551.149	125	44.409		
	Total	5681.769	127			
Leary Friendly	Between Groups	376.652	2	188.326	3.968	.021
	Within Groups	5932.257	125	47.458		
	Total	6308.909	127			

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Leary I	Epilepsy	Heart Disease	1.365	.696	.125	-.28	3.01
		Norma	-2.138*	.561	.001	-3.47	-.81
	Heart Disease	Epilepsy	-1.365	.696	.125	-3.01	.28
		Norma	-3.503*	.662	.000	-5.07	-1.94
	Norma	Epilepsy	2.138*	.561	.001	.81	3.47
		Heart Disease	3.503*	.662	.000	1.94	5.07
Leary II	Epilepsy	Heart Disease	-.360	.616	.828	-1.82	1.10
		Norma	-1.435*	.497	.012	-2.61	-.26
	Heart Disease	Epilepsy	.360	.616	.828	-1.10	1.82
		Norma	-1.074	.586	.162	-2.46	.31
	Norma	Epilepsy	1.435*	.497	.012	.26	2.61
		Heart Disease	1.074	.586	.162	-.31	2.46
Leary III	Epilepsy	Heart Disease	-.960	.533	.173	-2.22	.30
		Norma	-.625	.430	.317	-1.64	.39
	Heart Disease	Epilepsy	.960	.533	.173	-.30	2.22
		Norma	.335	.507	.787	-.87	1.54
	Norma	Epilepsy	.625	.430	.317	-.39	1.64
		Heart Disease	-.335	.507	.787	-1.54	.87
Leary IV	Epilepsy	Heart Disease	-.051	.557	.995	-1.37	1.27
		Norma	-.705	.449	.262	-1.77	.36
	Heart Disease	Epilepsy	.051	.557	.995	-1.27	1.37
		Norma	-.653	.529	.435	-1.91	.60
	Norma	Epilepsy	.705	.449	.262	-.36	1.77
		Heart Disease	.653	.529	.435	-.60	1.91
Leary V	Epilepsy	Heart Disease	-.392	.606	.795	-1.83	1.04
		Norma	.612	.489	.425	-.55	1.77
	Heart Disease	Epilepsy	.392	.606	.795	-1.04	1.83
		Norma	1.004	.576	.193	-.36	2.37
	Norma	Epilepsy	-.612	.489	.425	-1.77	.55
		Heart Disease	-1.004	.576	.193	-2.37	.36
Leary VI	Epilepsy	Heart Disease	-.210	.581	.931	-1.58	1.17
		Norma	-1.443*	.469	.007	-2.55	-.33
	Heart Disease	Epilepsy	.210	.581	.931	-1.17	1.58
		Norma	-1.233	.552	.069	-2.54	.07
	Norma	Epilepsy	1.443*	.469	.007	.33	2.55
		Heart Disease	1.233	.552	.069	-.07	2.54
Leary VII	Epilepsy	Heart Disease	-1.886*	.596	.005	-3.30	-.47
		Norma	-.107	.481	.973	-1.24	1.03
	Heart Disease	Epilepsy	1.886*	.596	.005	.47	3.30
		Norma	1.779*	.567	.006	.44	3.12
	Norma	Epilepsy	.107	.481	.973	-1.03	1.24
		Heart Disease	-1.779*	.567	.006	-3.12	-.44
Leary VIII	Epilepsy	Heart Disease	-2.178*	.598	.001	-3.59	-.76
		Norma	-1.290*	.483	.023	-2.43	-.15
	Heart Disease	Epilepsy	2.178*	.598	.001	.76	3.59
		Norma	.888	.569	.265	-.46	2.24
	Norma	Epilepsy	1.290*	.483	.023	.15	2.43
		Heart Disease	-.888	.569	.265	-2.24	.46
Leary Agression	Epilepsy	Heart Disease	.2516	1.6276	.987	-3.609	4.112
		Norma	-1.9051	1.3816	.355	-5.182	1.372
	Heart Disease	Epilepsy	-.2516	1.6276	.987	-4.112	3.609
		Norma	-2.1567	1.4901	.320	-5.691	1.378
	Norma	Epilepsy	1.9051	1.3816	.355	-1.372	5.182
		Heart Disease	2.1567	1.4901	.320	-1.378	5.691
Leary Friendly	Epilepsy	Heart Disease	-4.2975*	1.6825	.032	-8.288	-.307
		Norma	-.4459	1.4282	.948	-3.834	2.942
	Heart Disease	Epilepsy	4.2975*	1.6825	.032	.307	8.288
		Norma	3.8517*	1.5404	.036	.198	7.505
	Norma	Epilepsy	.4459	1.4282	.948	-2.942	3.834
		Heart Disease	-3.8517*	1.5404	.036	-7.505	-.198

*. The mean difference is significant at the .05 level.

AppendixN°4.

The type reaction of the disease. The comparison the groups of the temporal lobe epilepsy, ischemic heart disease and healthy people.

Descriptives

							95% Confidence Interval for Mean			
			N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
L	by I	Epilepsy	52	2.56	2.014	.279	2.00	3.12	0	8
		Heart Disease	31	1.87	2.391	.429	.99	2.75	0	8
		Norma	70	2.86	1.836	.219	2.42	3.29	0	9
		Total	153	2.56	2.039	.165	2.23	2.88	0	9
L	by II	Epilepsy	52	5.63	2.822	.391	4.85	6.42	1	13
		Heart Disease	31	6.68	3.187	.572	5.51	7.85	0	12
		Norma	70	1.87	1.903	.227	1.42	2.33	0	7
		Total	153	4.12	3.281	.265	3.60	4.65	0	13
L	by III	Epilepsy	52	5.08	2.648	.367	4.34	5.81	0	10
		Heart Disease	31	3.06	1.711	.307	2.44	3.69	0	7
		Norma	70	2.39	1.928	.230	1.93	2.85	0	8
		Total	153	3.44	2.465	.199	3.04	3.83	0	10
L	by IV	Epilepsy	52	1.75	1.919	.266	1.22	2.28	0	6
		Heart Disease	31	1.71	1.936	.348	1.00	2.42	0	6
		Norma	70	.60	.750	.090	.42	.78	0	2
		Total	153	1.22	1.597	.129	.96	1.47	0	6
L	by V	Epilepsy	52	6.21	2.979	.413	5.38	7.04	1	13
		Heart Disease	31	6.06	2.351	.422	5.20	6.93	2	10
		Norma	70	3.96	2.866	.343	3.27	4.64	0	10
		Total	153	5.15	3.002	.243	4.67	5.63	0	13
L	by VI	Epilepsy	52	1.31	1.966	.273	.76	1.85	0	11
		Heart Disease	31	.55	.810	.145	.25	.85	0	3
		Norma	70	.33	.756	.090	.15	.51	0	5
		Total	153	.71	1.371	.111	.49	.92	0	11
L	by VII	Epilepsy	52	.46	.896	.124	.21	.71	0	4
		Heart Disease	31	.23	.497	.089	.04	.41	0	2
		Norma	70	.23	.543	.065	.10	.36	0	3
		Total	153	.31	.681	.055	.20	.42	0	4
L	by VIII	Epilepsy	52	2.67	1.465	.203	2.27	3.08	0	6
		Heart Disease	31	2.26	1.413	.254	1.74	2.78	0	4
		Norma	70	1.17	1.090	.130	.91	1.43	0	3
		Total	153	1.90	1.459	.118	1.67	2.13	0	6
L	by IX	Epilepsy	52	1.15	1.392	.193	.77	1.54	0	4
		Heart Disease	31	1.23	1.117	.201	.82	1.64	0	3
		Norma	70	.46	.829	.099	.26	.65	0	5
		Total	153	.85	1.157	.094	.66	1.03	0	5

AppendixN°4.

The type reaction of the disease. The comparison the groups of the temporal lobe epilepsy, ischemic heart disease and healthy people.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Loby I	Between Groups	20.896	2	10.448	2.565	.080
	Within Groups	610.882	150	4.073		
	Total	631.778	152			
Loby II	Between Groups	675.966	2	337.983	52.773	.000
	Within Groups	960.675	150	6.404		
	Total	1636.641	152			
Loby III	Between Groups	221.511	2	110.756	23.661	.000
	Within Groups	702.149	150	4.681		
	Total	923.660	152			
Loby IV	Between Groups	48.945	2	24.473	10.831	.000
	Within Groups	338.937	150	2.260		
	Total	387.882	152			
Loby V	Between Groups	184.127	2	92.064	11.650	.000
	Within Groups	1185.415	150	7.903		
	Total	1369.542	152			
Loby VI	Between Groups	29.568	2	14.784	8.656	.000
	Within Groups	256.197	150	1.708		
	Total	285.765	152			
Loby VII	Between Groups	1.877	2	.938	2.049	.132
	Within Groups	68.685	150	.458		
	Total	70.562	152			
Loby VIII	Between Groups	72.209	2	36.104	21.549	.000
	Within Groups	251.321	150	1.675		
	Total	323.529	152			
Loby IX	Between Groups	19.982	2	9.991	8.165	.000
	Within Groups	183.560	150	1.224		
	Total	203.542	152			

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Loby I	Epilepsy	Heart Disease	.687	.458	.294	-.40	1.77
		Norma	-.299	.369	.697	-1.17	.58
	Heart Disease	Epilepsy	-.687	.458	.294	-1.77	.40
		Norma	-.986	.435	.064	-2.02	.04
	Norma	Epilepsy	.299	.369	.697	-.58	1.17
		Heart Disease	.986	.435	.064	-.04	2.02
Loby II	Epilepsy	Heart Disease	-1.043	.574	.168	-2.40	.32
		Norma	3.763*	.463	.000	2.67	4.86
	Heart Disease	Epilepsy	1.043	.574	.168	-.32	2.40
		Norma	4.806*	.546	.000	3.51	6.10
	Norma	Epilepsy	-3.763*	.463	.000	-4.86	-2.67
		Heart Disease	-4.806*	.546	.000	-6.10	-3.51
Loby III	Epilepsy	Heart Disease	2.012*	.491	.000	.85	3.17
		Norma	2.691*	.396	.000	1.75	3.63
	Heart Disease	Epilepsy	-2.012*	.491	.000	-3.17	-.85
		Norma	.679	.467	.316	-.43	1.78
	Norma	Epilepsy	-2.691*	.396	.000	-3.63	-1.75
		Heart Disease	-.679	.467	.316	-1.78	.43
Loby IV	Epilepsy	Heart Disease	.040	.341	.992	-.77	.85
		Norma	1.150*	.275	.000	.50	1.80
	Heart Disease	Epilepsy	-.40	.341	.992	-.85	.77
		Norma	1.110*	.324	.002	.34	1.88
	Norma	Epilepsy	-1.150*	.275	.000	-1.80	-.50
		Heart Disease	-1.110*	.324	.002	-1.88	-.34
Loby V	Epilepsy	Heart Disease	.147	.638	.971	-1.36	1.66
		Norma	2.254*	.515	.000	1.04	3.47
	Heart Disease	Epilepsy	-.147	.638	.971	-1.66	1.36
		Norma	2.107*	.606	.002	.67	3.54
	Norma	Epilepsy	-2.254*	.515	.000	-3.47	-1.04
		Heart Disease	-2.107*	.606	.002	-3.54	-.67
Loby VI	Epilepsy	Heart Disease	.759*	.297	.031	.06	1.46
		Norma	.979*	.239	.000	.41	1.55
	Heart Disease	Epilepsy	-.759*	.297	.031	-1.46	-.06
		Norma	.220	.282	.716	-.45	.89
	Norma	Epilepsy	-.979*	.239	.000	-1.55	-.41
		Heart Disease	-.220	.282	.716	-.89	.45
Loby VII	Epilepsy	Heart Disease	.236	.154	.277	-.13	.60
		Norma	.233	.124	.148	-.06	.53
	Heart Disease	Epilepsy	-.236	.154	.277	-.60	.13
		Norma	-.003	.146	1.000	-.35	.34
	Norma	Epilepsy	-.233	.124	.148	-.53	.06
		Heart Disease	.003	.146	1.000	-.34	.35
Loby VIII	Epilepsy	Heart Disease	.415	.294	.337	-.28	1.11
		Norma	1.502*	.237	.000	.94	2.06
	Heart Disease	Epilepsy	-.415	.294	.337	-1.11	.28
		Norma	1.087*	.279	.000	.43	1.75
	Norma	Epilepsy	-1.502*	.237	.000	-2.06	-.94
		Heart Disease	-1.087*	.279	.000	-1.75	-.43
Loby IX	Epilepsy	Heart Disease	-.072	.251	.956	-.67	.52
		Norma	.697*	.203	.002	.22	1.18
	Heart Disease	Epilepsy	.072	.251	.956	-.52	.67
		Norma	.769*	.239	.004	.20	1.33
	Norma	Epilepsy	-.697*	.203	.002	-1.18	-.22
		Heart Disease	-.769*	.239	.004	-1.33	-.20

*. The mean difference is significant at the .05 level.

Appendix№5.

The variables of EPQ. The comparison the groups of the temporal lobe epilepsy, ischemic heart disease and healthy people.

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
EPQ-Psychotism	Epilepsy	47	4.21	1.829	.267	3.68	4.75	0	9
	Heart Disease	30	2.93	1.437	.262	2.40	3.47	1	7
	Norma	70	2.63	1.687	.202	2.23	3.03	0	7
	Total	147	3.20	1.819	.150	2.90	3.49	0	9
EPQ-Extraversion	Epilepsy	47	10.49	3.064	.447	9.59	11.39	5	18
	Heart Disease	30	10.20	3.478	.635	8.90	11.50	4	18
	Norma	70	10.80	3.020	.361	10.08	11.52	5	17
	Total	147	10.58	3.118	.257	10.07	11.09	4	18
EPQ-Neurotism	Epilepsy	47	12.19	4.675	.682	10.82	13.56	2	19
	Heart Disease	30	9.93	3.704	.676	8.55	11.32	4	17
	Norma	70	10.31	3.843	.459	9.40	11.23	3	19
	Total	147	10.84	4.181	.345	10.16	11.52	2	19
EPQ-Lying	Epilepsy	47	8.53	2.394	.349	7.83	9.23	4	16
	Heart Disease	30	9.53	2.063	.377	8.76	10.30	6	13
	Norma	70	8.71	2.649	.317	8.08	9.35	3	18
	Total	147	8.82	2.471	.204	8.42	9.23	3	18

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
EPQ-Psychotism	Between Groups	73.197	2	36.599	12.852	.000
	Within Groups	410.082	144	2.848		
	Total	483.279	146			
EPQ-Extraversion	Between Groups	8.106	2	4.053	.413	.662
	Within Groups	1411.745	144	9.804		
	Total	1419.850	146			
EPQ-Neurotism	Between Groups	129.853	2	64.926	3.860	.023
	Within Groups	2422.229	144	16.821		
	Total	2552.082	146			
EPQ-Lying	Between Groups	19.947	2	9.973	1.648	.196
	Within Groups	871.455	144	6.052		
	Total	891.401	146			

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
EPQ-Psychotism	Epilepsy	Heart Disease	1.279*	.394	.004	.35	2.21
		Norma	1.584*	.318	.000	.83	2.34
	Heart Disease	Epilepsy	-1.279*	.394	.004	-2.21	-.35
		Norma	.305	.368	.687	-.57	1.18
	Norma	Epilepsy	-1.584*	.318	.000	-2.34	-.83
		Heart Disease	-.305	.368	.687	-1.18	.57
EPQ-Extraversion	Epilepsy	Heart Disease	.289	.732	.917	-1.44	2.02
		Norma	-.311	.590	.859	-1.71	1.09
	Heart Disease	Epilepsy	-.289	.732	.917	-2.02	1.44
		Norma	-.600	.683	.655	-2.22	1.02
	Norma	Epilepsy	.311	.590	.859	-1.09	1.71
		Heart Disease	.600	.683	.655	-1.02	2.22
EPQ-Neurotism	Epilepsy	Heart Disease	2.258	.958	.052	-.01	4.53
		Norma	1.877*	.773	.043	.05	3.71
	Heart Disease	Epilepsy	-2.258	.958	.052	-4.53	.01
		Norma	-.381	.895	.905	-2.50	1.74
	Norma	Epilepsy	-1.877*	.773	.043	-3.71	-.05
		Heart Disease	.381	.895	.905	-1.74	2.50
EPQ-Lying	Epilepsy	Heart Disease	-1.001	.575	.193	-2.36	.36
		Norma	-.182	.464	.918	-1.28	.92
	Heart Disease	Epilepsy	1.001	.575	.193	-.36	2.36
		Norma	.819	.537	.282	-.45	2.09
	Norma	Epilepsy	.182	.464	.918	-.92	1.28
		Heart Disease	-.819	.537	.282	-2.09	.45

*. The mean difference is significant at the .05 level.

Appendix№6.

The results of the factorial analysis in the group of temporal lobe epilepsy.

The group of the temporal lobe epilepsy	1	2	3	4
Leary 1	4,662E-02	,772	,248	2,095E-02
Leary 2	-1,069E-02	,836	-6,575E-02	-,244
Leary 3	,290	,740	1,719E-02	-,194
Leary 4	,740	,135	-,134	-3,239E-02
Leary 5	,369	-,101	,708	,105
Leary 6	8,855E-02	-7,031E-02	,672	,396
Leary 7	-,338	-,142	,748	3,439E-02
Leary 8	-,139	3,319E-02	,773	2,267E-02
BDI	,812	-,140	3,219E-02	,134
EPQ-extraver.	-,250	,478	8,835E-02	,513
EPQ-psychot.	,143	-,185	-,638	,213
EPQ-neurot.	,766	,131	-,124	4,314E-03
EPQ-lying	-,206	-,211	-,161	,544
LOBI1	-,103	,441	-6,120E-03	-4,759E-03
LOBI2	,749	-1,126E-02	-5,337E-02	,266
LOBI3	,497	-,114	-6,716E-02	-,101
LOBI 4	,799	-1,815E-02	-,106	9,622E-02
LOBI 5	-,212	,254	,508	-,369
LOBI 6	,200	1,336E-02	,231	,522
LOBI 7	,229	-,182	-5,527E-02	,318
LOBI 8	-,345	,351	-,119	-,307
LOBI 9	,540	-,259	,120	,513
gender	4,126E-02	-,423	7,472E-03	,539
lateraliziotion	9,284E-02	2,482E-02	7,664E-02	,449
freqvency	,107	-5,382E-02	-9,767E-02	,549
the onset of the disease	-,280	-9,895E-02	,305	2,488E-03
the type of the treatment	,243	,248	,296	-6,977E-02
marital status	,320	-,149	-,119	-,413
age group	-5,737E-02	-,368	7,763E-02	-,259

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
A Rotation converged in 7 iterations.

Component Transformation Matrix

Component	1	2	3	4
1	,790	-,422	-,154	,417
2	-,459	-,635	,473	,402
3	,352	,406	,841	,054
4	-,201	,503	-,211	,813

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Appendix№7.

The results of factorial analyzes in the group of the ischemic heart disease.

Heart Disease Group	1	2	3	4
Leary 1	-,524	-,312	,492	,289
Leary 2	-9,420E-02	4,834E-03	,626	-,175
Leary 3	-7,953E-02	-,433	,369	-,492
Leary 4	,385	-,619	-,358	,138
Leary 5	-,229	,718	-,148	-,126
Leary 6	-,127	,569	,347	,210
Leary 7	,198	,375	,602	,176
Leary 8	-,307	,646	,291	-,137
BDI	,911	-8,685E-02	-,129	,119
EPQ-psychot.	-,379	-,212	,214	,692
EPQ-extraver.	,174	-6,426E-03	-,226	,545
EPQ-neurot.	,629	-,198	-9,237E-02	-,478
EPQ-lying	,128	,291	,646	,231
ЛОБИ 1	-,747	8,466E-03	,288	2,655E-02
ЛОБИ 2	,644	-,173	-3,693E-02	-,147
ЛОБИ 3	,192	6,813E-02	,180	,808
ЛОБИ 4	,815	4,457E-03	2,973E-02	7,431E-02
ЛОБИ 5	-,390	-,200	2,039E-02	-,233
ЛОБИ 6	,526	-4,321E-02	,219	,333
ЛОБИ 7	5,505E-03	-1,750E-02	,534	-3,704E-02
ЛОБИ 8	-,557	,176	,320	-3,308E-02
ЛОБИ 9	,606	-,234	,209	,291
[illegible]	,472	-,257	,185	,180
[illegible]	-,471	4,264E-02	-,278	,309

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
A Rotation converged in 19 iterations.

Component Transformation Matrix

Component	1	2	3	4
1	-,916	,279	,288	,004
2	,336	,680	,403	,513
3	-,001	-,667	,638	,384
4	,219	,122	,589	-,768

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Appendix№8.

The results of the factorial analysis in the healthy people group.

healthy people group	1	2	3
Leary 1	,593	1,560E-02	8,880E-03
Leary 2	,662	6,194E-02	-5,955E-02
Leary 3	,514	8,878E-02	-6,288E-02
Leary 4	-,287	,172	3,822E-02
Leary 5	-,527	4,029E-02	-5,663E-02
Leary 6	-,337	-2,645E-02	,662
Leary 7	-,437	-,142	,641
Leary 8	-,355	-5,546E-02	,544
EPQ-psychot.	,127	,119	,204
EPQ-extraver.	4,382E-02	,199	,198
EPQ-neurot.	-,111	-,433	,228
EPQ-lying	-3,240E-02	-4,170E-02	,374
ЛОБИ 1	,107	-,394	-9,073E-02
ЛОБИ 2	-7,020E-02	,673	,178
ЛОБИ 3	,204	,603	,257
ЛОБИ 4	-,137	,792	-7,733E-03
ЛОБИ 5	,386	,142	,653
ЛОБИ 6	-,370	,367	8,358E-02
ЛОБИ 7	-4,833E-02	,608	-6,146E-02
ЛОБИ 8	,261	,166	,573
ЛОБИ 9	4,275E-02	,449	-,186
ხქეხი	,431	8,125E-03	,102
ახაჯი	-,135	2,883E-02	,134

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
A Rotation converged in 19 iterations.

Component Transformation Matrix

Component	1	2	3
1	-,856	-,111	,505
2	,040	,960	,278
3	,516	-,258	,817

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

დაავადებაზე რეაგირების შემდეგი ცხრა ტიპი ვლინდება:

1. ეიფორიულ–ანოზოგნოზური – უმიზეზოდ აწეული გუნება–განწყობა, რეჟიმის დარღვევა, დაავადების ობიექტური გამოვლინებებისა და მისი შესაძლო შედეგების აქტიური უარყოფა, დაავადების სიმპტომების მიწერა შემთხვევითი მოვლენებისადმი.
2. შფოთვით–იპოქონდრიული – მუდმივი ფიქრი დაავადების საშიშროების და მკურნალობის არაეფექტურობის შესახებ; მკურნალობის ახალი საშუალებების და დაავადებაზე დამატებითი ინფორმაციის მუდმივი ძიება, საკუთარ სუბიექტურ შეგრძნებებზე ყურდღების გამახვილება, რეალური დაავადების გაზვიადება;
3. სენზიტიურ–ობსესიურ–ფობიური – ნათესავებსა და ახლობლებისთვის თავის მობეზრების და მძიმე ტვირთად ყოფნის შიში; ავადმყოფობის გამო გარშემომყოფების მიერ არასრულფასოვნად აღქმის შიში; უფრო მეტად აღელვებთ წარმოსახვითი სირთულეები, ვიდრე რეალური, დაავადების საეჭვო გართულებები და შესაძლებელი, მაგრამ უსაფუძვლო წარუმატებლობა ოჯახში და სამსახურში;
4. მელანქოლიური – უიმედობის განცდა, დათრგუნვა ავადმყოფობით, გამოჯანმრთელების რწმენის დაგარგვა, პესიმიზმი, დეპრესიული, ზოგჯერ სუიციდური აზრებიც კი. არ სჯერათ მკურნალობის წარმატებისა დადებითი ობიექტური შედეგების შემთხვევაშიც;
5. ჰარმონიული – საკუთარი მდგომარეობის ადეკვატური, ობიექტური შეფასება, მკურნალობისადმი აქტიური ხელშეწყობა, საკუთარი ინტერესებისა და მიზნების გარდაქმნა ავადმყოფობით შეცვლილ, ახალ ცხოვრებისეულ სიტუაციაში;
6. აპათიური – სრული გულგრილობა საკუთარი მომავლისადმი, დაავადების მიმდინარეობისადმი, მკურნალობის შედეგებისადმი, მკურნალობისადმი პასიური დამორჩილება, ინტერესების სფეროს შევიწროვება;
7. პარანოიალური – რწმენა იმისა, რომ დაავადება სხვათა ზეგავლენის შედეგია; სხვების დადანაშაულება (ნათესავები, თანამშრომლები, ექიმები), ბრალდებები მათ მიმართ და დასჯის მოთხოვნა, მკურნალობისადმი უნდობლობა, ავადმყოფობის გართულებების ექიმების დაუდევრობისათვის მიწერა.

8. ერგოპათიური – “გაქცევა სამუშაოში”, დაავადების სიმძიმის მიუხედავად ცდილობენ მუშაობის გაგრძელებას, მუშაობენ უფრო მეტს და უფრო მეტი ინტენსივობით, მკურნალობენ მხოლოდ იმ შემთხვევაში, თუ ეს სამსახურის (სწავლის) გაგრძელებას არ შეუშლის ხელს;
9. ეგოცენტრული – “გაქცევა ავადმყოფობაში”; საკუთარი განცდების სააშკარაოზე გამოტანა გარშემომყოფთა ყურადღების მიპყრობის მიზნით, განსაკუთრებული ზრუნვის მოთხოვნილება, საკუთარი პიროვნების მიმართ განსაკუთრებული ყურადღების მოთხოვნა დაავადების პირობებში.