

# MEDICAL PSYCHOLOGY

State National Textbook



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Приводом для написання колективом авторів підручника з медичної психології стала актуальна потреба в створенні єдиного державного національного підручника для студентів вищих медичних закладів IV рівня акредитації, який відповідає вимогам кредитно-модульної системи навчання та сучасній уяві про роль і місце психічних знань в діяльності лікаря. В підручнику надаються прості та ясні алгоритми професійних відносин на різних етапах лікувального та діагностичного процесів.

Підручник розраховано на студентів вищих медичних навчальних закладів, майбутніх медичних психологів, а також лікарів різних фахів.

The reason for writing of the textbook of Medical Psychology by the collective of authors has become urgent need in a unified national state textbook for students of Medical Schools of IV accreditation level that meets the requirements of credit-modular educational system and the modern understanding about the role and place of psychic knowledge in activity of doctor. In the textbook simple and clear algorithms of professional relationships at different stages of treatment and diagnostic processes are given.

The textbook is aimed at students in Medical Schools, future medical psychologists and also doctors of different specialties.

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## «Medical Psychology»

### Slate National Textbook for students of Medical Schools of IV accreditation level of Health Ministry of Ukraine

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## **Section VI. Psychosomatic disorders**

### **Psychosomatic approach in medical psychology and medicine.**

#### **Psychosomatic approach as a principle of medical activities**

The ideas about close relation between the body and the soul, somatic health and mental state have always been the leading issue of medicine. Hippokrat considered that it was necessary to treat the patient, not the illness, i.e. a holistic approach to diagnosis and treatment was necessary. It is important to take into account not only somatic state of the patient, but also his/her psychological features, psychosomatic mechanisms of development and course of the disease.

Psychosomatics is the branch of medical psychology studying psychical factors in the development of functional and organic somatic diseases.

Psychosomatic medicine began to develop quickly at the beginning of the 20th century. Millions of cases of so-called “functional patients” were registered at that time. Their somatic complaints were not confirmed with objective studies, treatment with traditional drugs was ineffective. At first correction of the affective states and disorders in the interpersonal relations of the patients that is psychotherapy, mental consultations were necessary. Changes of somatic wellbeing because emotional influences are: non-pathological psychosomatic reactions, psychosomatic diseases, influence of emotional state on onset and course of somatic diseases, somatoform disorders.

When studying the relation between somatic and mental states it is reasonable to distinguish the following types:

1. Psychological factors as a cause of somatic disease (proper psychosomatic diseases).
2. Mental disorders which manifest with somatic symptoms and signs (somatization disorders).
3. Mental consequences of somatic diseases (including psychic reactions

to the fact of somatic disease).

4. Incidentally simultaneous mental disorders and somatic diseases.
5. Somatic complications of mental disorders.

### **Theories of psychosomatic relationships**

The representatives of psychoanalysis explain psychosomatic pathology emphasizing the prevail of forcing out emotional experience (protective mental mechanism which manifests with subconscious exclusion of the undesirable thought or emotion from the conscience) which later manifest with somatic symptoms and signs in the patients with psychosomatic signs. But they neglect the organic pathology, though in practice the physician should remember that the patients may develop organic diseases, psychotherapy is not sufficient right from the beginning of the disease, the treatment of the respective disease with the use of modern pharmaceuticals, sometimes surgery are necessary.

Scientific validation of psychosomatic relations can be found in I.P. Pavlov's theory of conditional reflexes. P.K. Anokhin, a Russian neurophysiologist, worked out a biological theory of functional systems. It is the concept about organization of the processes in the whole organism which interacts with the environment. This theory views the functions as achievement of an adaptation state by the organism at its interactions with the environment. According to this theory, any emotional reaction is viewed as a holistic functional system which combines the brain cortex, subcortical structures and the respective regions of the body.

From the point of view of neurophysiology, emotional processes involve both central (hypothalamus, limbic system, structures of activation and rewarding) and peripheral structures (catecholamines, adrenal hormones, vegetative nervous system). Extreme in its force and duration irritants change the functional state of the central and peripheral nervous system. With this functional disturbances locus minoris resistentiae (sites of minor resistance) may develop. There is a system of i oustant



feedback which determines the possibility of therapeutic action on the emotional factor.

In response to psychoemotional stimuli various non-pathological psychosomatic reactions (visceral, sensor) may develop. Psychosomatic reactions may appear not only in response to psychic, emotional influences but also to direct action of the irritants (e.g., a view of a lemon). Representations may influence the somatic health of the person. Psychoemotional factors may cause the following physiological disturbances in various organs and systems of the organism:

- a) in the cardiovascular system - increased heartbeat, changes in the blood pressure, vascular spasms;
- b) in the respiratory system - delay, increased or decreased respiratory rate;
- c) in the digestive system - vomiting, diarrhea, constipation, increased salivation, dryness in the mouth;
- d) in the sexual sphere - increased erection, weak erection, clitoris swelling, lubrication of the sex organs, anorgasmia;
- e) in the muscles - involuntary reactions: muscular strain, tremor;
- f) in the vegetative system - perspiration, hyperemia.

### **Emotional stress as a factor in the pathogenesis of psychosomatic disorders**

Psychosomatic disorders are those the origin and course of which are chiefly determined by psychological factors. The cause of psychosomatic diseases is affective (emotional) overstrain (conflicts, rage, fear) when definite personality features are present. Psychological factors play a role in other diseases: migraines, endocrine disorders, malignant tumors. Nevertheless it is important to distinguish true psychosomatic diseases, their development is determined by psychic factors and prevention should be aimed at elimination and correction of emotional overstrain (psychotherapy and psychopharmacology) and the diseases, the development of which is also influenced by mental and behavioral factors because they change

nonspecific organism resistance but they are not the primary cause of their occurrence. For example, it is known that influence of psychoemotional stress can decrease the immune reactivity which increases the probability of diseases (including infectious).

Psychogenic component plays an active role in various organic disorders, e.g., hypertension, gastric and duodenal ulcer, myocardial infarction, migraine bronchial asthma, ulcerative colitis, neurodermitis. These diseases are frequently termed “major” psychosomatic diseases, emphasizing the severity of the disease and a leading role of the psychogenic factor in their development.

True psychosomatic disorders are characterized by the following:

1. Psychic stress plays a key role in the origin.
2. After its manifestation the disease becomes chronic or relapsing.
3. The first manifestations can be noted at any age, but chiefly in teenagers.

Classical clinical pictures of seven diseases, namely essential hypertension, ulcer, bronchial asthma, neurodermitis, thyrotoxicosis, ulcerative colitis, rheumatoid arthritis, are psychosomatic disorders.

Psychosomatic disorders are the consequence of stress caused by prolonged mental traumas, inner conflicts between similar in the intensity but different in direction motives. Some types of motivation conflicts are believed to be specific for definite diseases. Thus, hypertension is associated with the conflict between strict social control of the behavior and an unrealized need of power. The unrealized need causes aggression, which cannot be manifested because of social restrictions. In contrast to neuroses based on intrapsychic conflicts, psychosomatic disorders are characterized by dual forcing out of an unacceptable motive and neurotic anxiety and neurotic behavior.

### **Mechanisms of psychological protection of the individual**

As it is important to understand the essence of protective psychological mechanisms, therefore it is necessary to characterize them. The protective

mechanisms are divided into primitive, or immature (splitting, projection, idealization, identification), and more mature (sublimation, rationalization). But neither the number of variants of protection (several dozen have been described) nor their taxonomy are generally accepted.

One group combines the types of protection which decrease the level of anxiety but do not change the character of inducements. They are *inhibition or forcing out* from the conscience of unacceptable inducements or feelings, denial of the source or feeling of anxiety; *projection* of transfer of the desires and feelings to the other; *identification* - mimicking the other person with ascribing his qualities; *inhibition* - blocking in the behavior and conscience of all manifestations associated with the anxiety. The other group unites the forms of protection in which the mechanisms reducing the anxiety and changing the direction of the motives work: *autoaggression* — direction of the hostility to himself; *reversion* — polar changes in the motives and feelings to opposite; *regression* - decrease, or turning to earlier childish forms of reaction; *sublimation* - transformation of the unacceptable forms of satisfaction of the needs to other forms, e.g. creative work in art or science.

The main nine *forms of mental protection* are the following.

1. **Forcing out.** This is inhibition or exclusion of unpleasant or unacceptable events or phenomena from the conscience that is removal of the moments, information which cause anxiety. For example, in neurosis main causative event is frequently forced out. Interesting are the following psychological experiments. The subjects were given the photos of specific conflict situations close to their experience. The subjects were expected to describe them, but they seemed to forget the photos and put them aside. When the photos were given in the state of hypnosis, the protection was taken away and the photos caused the effect

adequate to their content. Similar mechanism of protection is in the basis of a well known phenomenon when the person notices somebody's errors and faults and forces out his own. In other experiments the subjects were given tests on achieving success at doing some task. They recollected only those tasks which they had done correctly and "forgot" those which they had failed.

2. Substitution is switching from an unpleasant, causing anxiety experience (subject) to another. This variety of psychological defense can be illustrated by the following examples. After a conflict with the chief or a quarrel with a date the person directs his/her anger to the members of the family (rationalization can frequently take place). The person during an existing talk crumples a sheet of paper. A girl when hearing a phrase "your boyfriend is always letting you down" throws away the cat sitting on her knees.

3. Rationalization. This is an attempt to substantiate the desires and acts if recognition of their course could threaten with loss of self-respect. The examples are numerous. If a greedy person is asked to lend some money, he can always find a reason why he cannot do it (to teach a lesson, etc.). If a person is unpleasant to you, you can always find a lot of shortcomings, though your dislike may not be associated with them. The patient can explain his interest to medical literature with the necessity to broaden his/her outlook.

4. Projection. Protection in the form of projection is unconscious transfer of unacceptable feelings to another person, ascribing somebody's own socially inappropriate desires, motives, acts and qualities to the surrounding persons. An example of it can be the behavior of a young well-to-do man who placed his mother to the house for aged persons and is indignant with the bad attitude of the personnel to her. To a certain degree, projection simplifies the behavior, excluding the necessity to evaluate the acts constantly. We frequently transfer our behavior to other people, projecting out emotions to them. If a person is quiet, sure of himself, well-disposed, he thinks that the rest are also well-disposed. A strained frustrated persons, unsatisfied in his wishes is hostile and

projects this hostility to the other.

5. Somatization. This form of protection is expressed in exit from a difficult situation with fixation on the state of health (illness before tests is the simplest example). In this case significant is benefit of the illness - increased attention and decreased demands of the relatives. In more severe cases this form of protection becomes chronic, as a rule, exaggerated attention to the health and overestimation of the severity of the disease including creating the own concepts of the disease are present. Hypochondriac syndrome may develop.

6. Reactive formation. In this case unacceptable tendencies are changed to the opposite ones. Thus, turned down love is often expressed in hatred to the former object of love, boys try to hurt the girls they love, the people who are secretly envious frequently sincerely believe that they are true admirers of the person they are envious of.

7. Sublimation. This form of psychological protection is characterized by transformation of unacceptable impulses to socially acceptable forms of instinctive requirements which cannot be realized in an acceptable way out and the means of expression (e.g., people who do not have children frequently have pets). For some people, hobbies are a way of realizing the most unbelievable motives. Egoistic and even "forbidden" purposes can be sublimated with an activity in arts, literature, religion, science. Aggressive impulses, for example, can be sublimated in sports or policy. But proper psychological protection is meant when the person does not realize that his activity is determined by hidden impulses with biological and egoistic basis.

8. Regression. This is turning back to primitive forms of reaction and behavior. Especially frequently this form of psychological protection is observed in children. For example, children without parents demonstrate the behavior characteristic to development retardation: the child who began to walk suddenly stops to walk, enuresis, which was present in infancy, recurs. We can mention a habit to suck the finger in difficult situations (this feature can be seen not only in

children but also in adults). Elements of psychological protection in the form of regression can be observed in some mental diseases.

9. Negation. This is a protective mechanism, which does not recognize but rejects impracticable desires, intentions, facts and actions by unconscious negation of their existence that is real phenomena are believed to be not existing. It is necessary to emphasize that negation is not a conscious attempt to renounce, like in mimicking or lie.

In the majority of real situations several forms of psychological protection are usually used together. This should be taken into account by the doctors working both with healthy and sick persons.

An unresolvable conflict of motives (as well as uncontrolled stress) causes capitulation, refusal from the search, which creates the background for development of psychosomatic disorders in the form of masked depression, file lesion to the organs and systems is due to genetic factors or peculiarities of ontogenetic development.

### **Characteristics of psychosomatic disorders**

Revealing psychological features which are responsible for development of psychosomatic diseases resulted in description of the features which are present in the patients with different diseases. These are reserve, anxiety, sensitivity. Below you can find descriptions of the patients with definite psychosomatic disorders.

*Essential hypertension.* Main properties of the personality, prone to development of essential hypertension, are intrapersonal conflict, interpersonal strain between aggressive impulses on the one hand and feeling of dependence on the other hand. Development of hypertension is due to the wish to manifest hostility at a simultaneous need of passive and adaptive behavior. This conflict can be characterized as a conflict between contradictory personal wishes (desire of frankness, honesty and sincerity in communication and politeness, avoidance of conflicts). At stress such person can restrain his irritation and inhibit the desire to answer the

offender. Suppression of negative emotions in the person during stress which is accompanied by a natural increase in the blood pressure can aggravate the condition and promote stroke development.

We examined the mental state in patients with arterial hypertension and performed daily monitoring of the arterial pressure. Our study demonstrated that at the early stage of arterial hypertension after increase of the arterial pressure the patients reduce the level of anxiety. Thus, compensatory role of pressure elevation due to prolonged psychoemotional strain was confirmed.

At the beginning of hypertension disease the majority of patients can adequately evaluate their state, perceive the administrations adequately. Some suspicious patients think that increase in the blood pressure is a tragedy, catastrophe. Their mood is decreased, the attention is fixed on the sensations, the sphere of interests diminishes and is limited to the disease.

In some patients the diagnosis of the disease does not produce any reaction, they neglect the disease, refuse from treatment. This attitude to the disease is observed chiefly in alcohol abuse.

It is necessary to admit that there is no direct association between the level of the arterial pressure and probability of mental disorders development. When examining the mental state in hypertensive subjects with daily monitoring of the arterial pressure we determined the indices of the arterial pressure which can play a role in prognosis of mental disorders in this disease. These are high variability of the arterial pressure during the day and disturbances in the circadian rhythm of the pressure fluctuations: increase or absence of night reduction in the blood pressure level.

The patients with hypertension should be explained the causes of their state. They should know that the disorders of the nervous system are functional, temporary and with the proper treatment the function will be restored.

*Coronary artery disease.* It has long been considered that emotional stress can result in coronary artery disease. "Coronary personality" has been described in the literature. This idea is difficult to prove because only prospective studies can distinguish psychic factors present before the heart disease and the consequences of the disease. In the studies performed in the 80s the attention was paid to several groups of possible risk factors which include chronic emotional disorders, social economic difficulties, fatigue, constant aggressors as well as behavioral pattern A. The most probable is pattern A which is characterized by hostility, excessive aspiration to competition, ambition, constant feeling of lack of time and concentration on limitations and prohibitions. When performing the studies devoted to primary and secondary prevention, main approach consisted in elimination of such risk factors as smoking, irregular diet, insufficient physical load.

*Angina.* Attacks of angina can frequently be induced by anger, anxiety, excitement. The sensations survived during the attack can be horrifying, sometimes the patient becomes too careful in spite of the doctor's efforts to make him get back to his ordinary lifestyle. Angina can be accompanied by atypical pain in the chest, edema due to anxiety and hyperventilation. In many cases there is discrepancy between the real capability of the patient to withstand the physical load determined objectively and their complaints on the pain in the chest and limitation of the activity.

A good effect is produced by conservative treatment together with the adequate exercise. Some patients benefit from behavior therapy administered according to an individual scheme.

*Cardiophobia.* One of psychovegetative syndromes which is frequently observed in medical practice is cardiophobia. Discomfort and unusual sensations in the left side of the chest, which first occur in the situation injuring the mental state, determine the increasing anxiety of the patients and fixation on the activity of the heart, which increases the belief in the presence of a serious heart disease and fear of death. At first increasing affective strain, anxiety and suspicion, fears as well as constitutional and developed peculiarities of the personality are the basis for



development of acute cardiophobic attack. Vital unbearable fear experienced by the patients with cardiovascular disorders cannot be compared with the ordinary sensations in their intensity and character. Feeling of a close death is the only reality for the patient. The obvious fact that dozens of attacks did not cause infarction or cardiac failure does not mean anything. As it has long been known that it is dreadful to be dying not to die, the life of the patients which “died” several times is tragic. Especially important in this case is rational psychotherapy and suggestion. The life of the patient depends on their correct use and administration.

*Apnea.* This is caused by numerous respiratory and cardiac disorders and can increase due to mental factors. In some cases apnea is of purely psychological origin: a typical example is hyperventilation due to anxiety.

*Asthma.* This is thought to be caused by unsolved emotional conflicts associated with the relations of subordination, but the proofs for this are not satisfactory. In bronchial asthma contradiction between “desire of tenderness” and “fear of tenderness” are noted. This conflict is described as a conflict “possess- give”. Patients with bronchial asthma are frequently hysteric or hypochondriac, they cannot “release their anger to the air” and provoke attacks of suffocation. Asthmatics are hypersensitive, especially to odors.

It is known that emotions (anger, fear, excitement) can produce and increase the attacks in asthma. It was reported that in children who had died of severe form of asthma, chronic mental and family problems had been noted more often than in the other asthma patients.

Mental disorders are not more frequent in children with asthma than in the whole children population but when these children have mental problems they are more difficult to treat.

There were several attempts to treat asthma using psychotherapy and behavioral therapy but there are no convincing data suggesting the efficacy of these methods when compared with ordinary advice and support. Individual and family psychotherapy can benefit in treatment children with asthma in case when psychological factors are important.

*Gastritis.* In patients with gastritis and ulcer a specific character is formed in the childhood, these adult patients constantly need protection, support and guardianship. They respect force, independence and strive for them. As a result two opposite mutually exclusive needs (guardianship and independence) exist which causes unresolvable conflicts.

*Ulcer.* The patients with gastric and duodenal ulcer have specific features. They are often persons with explosive emotions, their thinking is categorical, ill, frank. The other group of the patients is not prone to external manifestations of these emotions. They are frequently gloomy, distrustful people. Some authors associate ulcer with inappropriate for self-perception, need in protection.

Strong prolonged affects, negative emotions such as constant fear, grief, lead to strained cortical activity can cause prolonged spasm of the blood vessels in the stomach walls, if the resistance of the mucous membrane to the action of hydrochloric gastric juice is low, it can result in ulcer appearance. Further development of the disease depends on both the above factors and appearance of pain impulses from interoreceptors of the involved organ. Psychotherapy influences the course of the disease and the efficacy of treatment.

*Colitis.* Ulcerative colitis was noted to begin after experiencing "loss of the object" and "catastrophe of experience". Decreased self-estimation, excessive sensitivity to the failures and strong desire of protection and dependence are characteristic to these patients. The disease is often regarded as equivalent to grief.

*Diabetes mellitus.* Feeling of chronic dissatisfaction is characteristic for the personality of the patients with diabetes mellitus. But it is believed that in contrast to the patients with the other psychosomatic disorders there is no definite diabetic

of personality.

*Neurodermitis.* Eczema and psoriasis are considered to be neurodermitis of somatic origin. The patients are passive, they experience difficulties with self-control.

*Diseases of the locomotor system.* The patients with rheumatoid arthritis are characterized by “stiffed and exaggerated position”, they demonstrate high level of self-control. Characteristic is the tendency to self-sacrifice and exaggerated helpfulness to help the people. Their help has an aggressive character.

### Prophylaxis of psychosomatic diseases

The leading role in treatment psychosomatic disorders is played by general medicine. But psychotherapy is also important for prevention of these diseases and in all stages of treatment and rehabilitation. Important is revealing personal disposition and prolonged personality-oriented psychotherapy. General physicians should train the patients the skills of psychic self-regulation, autogenic training for mobilizing and relaxation in stress situations.

The approach to treatment of neurotic and somatoform disorders, when the complaints of the patients are associated with functional somatic diseases caused by mental disorders, is different. In this case the treatment is administered by a psychiatrist with the use of psychotherapy and psychopharmacotherapy.

### **Thematic plan for self control**

I Psychosomatic approach in Medical Psychology and medicine.

2. The biopsychosocial concept of disease.

I Emotional stress as a factor in the pathogenesis of psychosomatic disorders.

I Theories of psychosomatic relationships

5. Mechanisms of psychological protection of the individual.
6. The concept of adaptation and maladjustment.
7. Classification of psychosomatic disorders.
8. Classic psychosomatic disorders ("Great Chicago Seven" by F. Aleksander).
9. Non-pathological psychosomatic disorders.
10. Principles of prevention and treatment of psychosomatic disorders.

## Section VII. Psychological characteristics of patients with various diseases

### Psychological changes at diseases of the cardiovascular system

Psychosomatic component first of all is typical for next diseases of the cardiovascular system:

- Essential arterial hypertension
- Coronary heart disease
- Irregular heartbeat
- Cardiac neurosis of fear

The heart and the vessels are involved in all forms of the life, although people do not understand it normally.

Pathological disturbances in the cardiovascular system are associated with fear, anger, rage anguish and other negative emotions. The formation of the adrenaline happening this time causes vasoconstriction, increasing of the heart rate and increased myocardial contraction, which, in turn, leads to the condition of the anxiety and fear.

If the prepared activation of blood circulation is not realized for a long time because of external delays or internal inhibition, violations associated with expectation of the action occur in some cases. There is also the opposite situation: an installation on the action that pushed out of consciousness leads to emotional stress that has an effect on the circulatory system.

The main role in the pathogenesis of cardiovascular diseases hostility plays (Barefoot et al., 1996; Barefoot et al., 1994; Benotsch et al., 1997; Siegman, Smith, 1994; Siegman et al., 1992) and the behavior of type A (Booth-Kewley, Friedman, 1987).

The value of neurogenic and psychogenic factors was noted in the development of *heart attack* and *myocardial infarction* since ancient times.