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REHABILITATION OF COMBATANTS WITH CONSTANT PHYSIOLOGICAL STRESS

*The purpose of this article is to introduce Psychosemantics of Types of Military Stress of Combatants: we mean Constant physiological stress of combatants with Post-traumatic stress disorder; to show the stages and the mechanisms of rehabilitation of combatants with constant physiological stress. **Methods of the research.** The following theoretical methods of the research were used to solve the tasks formulated in the article: a categorical method, structural and functional methods, the methods of the analysis, systematization, modeling, generalization. The experimental method was the method of organizing empirical research. **The results of the research.** We proved, that psychological and physiological rehabilitation of combatants served such basic tasks, as: detection and diagnosis of mental disorders in military personnel; evacuation of combatants who have been psychologically traumatized from the battlefield; restoration of impaired (lost) mental functions; correction of self-awareness, self-esteem and well-being of combatants who received mental disorders and physical mutilations. **Conclusions.** We showed, that the following methods were widely used by psychologists and rehabilitation specialists of military units and unit commanders in the practice of psychological rehabilitation of combatants who had received combat mental trauma: autogenic techniques (performance of mental self-regulation techniques, self-training, meditation, etc.); physiological methods (deep sleep, rest, quality food, drinking a lot of water, shower, field bath); organizational means (establishing a clear regime of work and rest, involvement of servicemen into active combat training, service, preservation of military uniform); medication means (sedatives, tranquilizers, antidepressants, nootropics, psychostimulants, phytotherapy, vitamin therapy, etc.); psychotherapeutic techniques and methods (individual and group rational psychotherapy, music, library, art, nature therapy, etc.).*

Key words: psychological and physiological rehabilitation, constant physiological stress, psychosemantics of Types of Military Stress, combat mental trauma, correction of self-awareness.

<http://doi.org/10.31891/pcs.2024.2.9>

1. INTRODUCTION

The problem of psychological and physical rehabilitation of combatants is particularly actual today, especially in Ukraine, when war events and operations have continued for more than ten years. From 2014 combat operations have been taking place in the east of our country, but from February, 2022 combat operations have been taking place throughout the territory of Ukraine. The magnitude of this phenomenon within Ukrainian society requires an active study of the psychological problems of military personnel, the creation of special centers throughout the country to provide social, psychological and medical assistance to combatants, and especially to those ones who received combat wounds and mutilations, becoming disabled.

Participation in hostilities is considered a great stress factor of the highest degree of intensity [9; 14]. The problem of preserving the

health and working capacity of persons participating in military conflicts has recently attracted the attention of a large number of researchers [2; 8]. New conceptual approaches to the organization of psychological and physical rehabilitation at its various stages for certain categories of military specialists have been developed [4; 7; 11]. However, the socio-psychological aspects of the content and specifics of the implementation of comprehensive psychological and physical rehabilitation programs are, unfortunately, focused on certain categories of wounded and sick, and on the specifics of the manifestations of mental disorders of military personnel, have not been sufficiently developed [13; 15; 17]. So, this problem is very actual for Ukrainian citizens, for Ukrainian society throughout the territory of Ukraine.

2. THE PURPOSE OF THE RESEARCH

The purpose of this article is to introduce Psychosemantics of Types of Military Stress of Combatants: we mean Constant physiological stress of combatants with Post-traumatic stress disorder; to show the stages and the mechanisms of rehabilitation of combatants with constant physiological stress.

3. METHODS OF THE RESEARCH

In general, 95 militaries were participated in our research. The place of organizing this stage of the experiment was the Main Military Clinical Hospital (the Center), Kyiv, Ukraine. They were in the age 24-45 years old. At this stage all respondents were included into one experimental group. These militaries were sent for inpatient treatment by the military commissariats of Kyiv to resolve the issue of fitness for military service. All soldiers have been served in the army in the military zone of Ukraine in the south-east of Ukraine (Donetsk, Lugansk and Kherson regions). They all were included by us into experimental group, which was formed by the help of method of randomization. This stage of the experiment was organized in February–May,

2023. To evaluate the results of our research we used “26-scale bipolar version of the semantic differential for studying the characteristics of combatant stress of military personnel” [1].

4. RESULTS AND THEIR DISCUSSION

Based on these facts, we can tell, that a small and short-term stress can affect a person without significant consequences, while a long and significant one puts the combatants' physiological and psychological functions out of balance, negatively affects the combatants' health, work capacity, work efficiency and relationships with others (in this case it is called distress).

In this our article we'd like to introduce Psychosemantics of Types of Military Stress of Combatants: we mean Constant physiological stress of combatants with Post-traumatic stress disorder. Constant physiological stress is associated with physical overloads of the body and the influence of various harmful environmental factors on it (uncomfortable temperature, high noise level, etc.) [12].

On Fig. 1 we showed the image of combatant with Constant physiological stress.



Fig. 1. Constant physiological stress

In our publications we showed, that **psychological stress** is a consequence of:

- **violation of the psychological stability** of the person (for example, affected self-esteem, negative reasons of war, etc.);

- **psychological overload** of the person (increased responsibility, large amount of war destroyed activity, etc.) [12].

For this group of combatants with Constant physiological stress there are tangent the main synonymous series, having been formed on the basis of such stylistically neutral nominal tokens,

as: terrible horror, difficulties with performing a military action or doing rather a simple task, lack of empathy, lack of kindness towards other people, lack of experience for providing complex military actions, neurotic level of the person's

psyche, depression, post-traumatic stress, feverish passivity, pathological fear, combat shock, difficulty falling asleep, panic, general anxiety, combat fatigue, etc. The results of factor analysis of obtained data are shown in Table 1.

Table 1

Factor weight of stylistically neutral nominal tokens of *Constant physiological stress of combatants with Post-traumatic stress disorder*

№	The name of stylistically neutral nominal tokens of Constant physiological stress	Factor weight	№	The name of stylistically neutral nominal tokens of Constant physiological stress	Factor weight
1	terrible horror	0,87	16	phobia like a fear	0,49
2	difficulties with performing a military action or doing rather a simple task	0,86	17	the latent form of fear	0,48
3	lack of empathy	0,81	18	combat mental trauma	0,46
4	lack of kindness towards other people	0,80	19	fearness	0,45
5	lack of experience for providing complex military actions	0,78	20	combat reflexes	0,40
6	neurotic level of the person's psyche	0,76	21	aggressiveness	0,39
7	depression	0,75	22	dulling of emotions	0,37
8	post-traumatic stress	0,73	23	increased vigilance	0,36
9	feverish passivity	0,71	24	violation of memory and concentration of the attention	0,35
10	pathological fear	0,69	25	exaggerated response	0,30
11	combat shock	0,67	26	unwanted memories	0,29
12	difficulty falling asleep	0,65	27	hallucinatory experiences	0,28
13	panic	0,64	28	suicidal thoughts	0,27
14	general anxiety	0,61	29	trauma	0,25
15	combat fatigue	0,58	30	abuse of narcotic and medicinal substances	0,23

The main disorders of the servicemen's mental activity are related to the experience that traumatizes the psyche and which is caused by military conditions, but their degree largely depends on the totality of the reaction to this factor of the entire unit. The collective reaction has a strong influence on the discipline and organization of military units.

Another factor affecting the human psyche is the degree of mastery of weapons and military equipment, it is the completeness of an objective idea of the future conditions of hostilities. One of the most important factor is contributing to the occurrence of combat psychological trauma is *a sleep (a dream, sleeping, slumber, dreamland, doss, shut-eye) disorder*. Already after one sleepless night, fighting capacity decreases, the amount of memory quickly decreases, primarily short-term, which leads to less assimilation of incoming information and makes it difficult to make decisions at important moments. The

reaction to critical situations that suddenly arose decreases.

Scientists [5; 10; 16] group most of the mental disorders of wartime into three main groups. First of all, they distinguish mental disorders, the leading symptom of which is *pathological fear*. Its typical picture is: cold sweat, dry mouth, palpitations, tremors of the limbs that cover the whole body and last for several hours, involuntary separation of urine and feces, stuttering, loss of speech, functional paralysis of the limbs.

Motor and numb forms of fear are also distinguished. Motor movements are, as a rule, various types of uncontrolled movements, for example: escape from a source of danger. A serviceman, gripped by a numb form of fear, is in a stupor, his/her face is gray, combatant's gaze is fading, it is difficult to establish contact with him/her. This group also includes *the latent form of fear*, which was called *feverish passivity*. It is characterized by senseless activity that leads to

the failure of the tasks. In headquarters, such activity slows down or even paralyzes general activity of a man. Its concrete manifestation can be the formation of new working groups that do nothing significant, except for the organization of numerous telephone and radiograms that contradict each other.

Fear spreads among people as a chain reaction, which is explained by the lack of personal responsibilities of the individual when he/she is in well-organized team and the prevailing emotions in his/her actions are clear, but they are often of a primitive nature. This leads to collective reactions, one of which is *panic*.

Another group of reactions is the person's attempts to erase combat episodes from the person's memory. The consequences of such reactions are most often various disciplinary offenses, alcohol consumption, drug addiction and negligent homicide. As a rule, these reactions take their place after hostilities, but they can also occur during them. The third group includes disorders called *combat fatigue* associated with long-term combat operations. In this group, *combat shock* is distinguished. Combat shock is a simple emotional reaction that occurs after several hours or days of intense combat operations. It is characterized by feelings of anxiety, depression and fear. Combat fatigue occurs after several weeks of medium-intensity combat operations.

Combat mental trauma is also distinguished by the degree of severity. The most frequent manifestations of a mild degree are excessive irritability, isolation, headaches, loss of appetite, nervousness and rapid fatigue. In the cases of moderate severity, mental disorders are manifested in the form of aggressiveness, depression, hysterical reactions, temporary memory loss, increased sensitivity to noise, pathological fear that sometimes turns into panic, loss of a sense of the reality of what is happening to the individual at the moment. In severe cases, vision, speech, hearing, movement coordination disorders occur.

Combat reflexes do not seem unusual while the person is in a combat zone. But returning home, getting into such an environment where the manifestation of such reflexes creates, at least, a strange impression, relatives and acquaintances of the soldier in various ways try to convey to the consciousness of the serviceman that it is time to stop behaving as if in war. But

none of them is able to competently explain how to do it.

When a person does not have the opportunity to discharge internal tension, his/her body and psyche find a way to adapt to this tension. This, in principle, is the mechanism of *post-traumatic stress*. Its symptoms, which in the complex look like a mental abnormality, are in the fact that nothing more than deep-rooted patterns of behavior associated with extreme events in the past.

Post-traumatic stress disorders are manifested in such *clinical symptoms* as:

1. *Aggressiveness*. We see man's desire to solve problems using *brute force*. Although, as a rule, this refers to *physical force*, but *mental, emotional and verbal aggressiveness* also occurs. A person tends to apply forceful pressure on others whenever he/she wants to achieve his/her goal, even if the goal is not *vital*.

2. *Dulling of emotions*. A person completely or partially loses the ability to *emotional manifestations*. It is difficult for him/her to establish close and friendly relations with those ones who are around him/her, to love, to have a joy, to behave himself/herself creatively, to show playfulness and spontaneity, which are not available to this person. Many veterans complain that since the difficult events that struck them, it has become much more difficult for them to feel these feelings.

3. *Abuse of narcotic and medicinal substances*. In the attempt to reduce the intensity of post-traumatic symptoms, many veterans abused tobacco, alcohol and other narcotic substances. It is important to note that among veterans who are victims of post-traumatic stress disorder, there are *two more large groups*: those ones who take only drugs prescribed by a doctor, and other veterans who do not use any drugs or drugs at all.

4. *Increased vigilance*. A person keeps a close eye on everything that happens around him/her, as if he/she is in danger. But this danger is not only external, but also internal one. It consists of the fact that unwanted traumatic impressions that have a destructive force enter combatant's consciousness. Increased vigilance is often manifested in a form of *constant physical stress*. This physical stress, which does not allow a person to relax and rest, can create many problems. Firstly, maintaining such a high level of vigilance requires constant attention and a huge expenditure of energy. Secondly, a person

begins to realize that this is his/her main problem and as soon as the tension can be reduced or relaxed, everything will be fine.

5. **Violation of memory and concentration of the attention.** A person experiences great difficulties when it is necessary to concentrate or remember something, at least such difficulties are arisen under certain circumstances. At some moments, concentration can be excellent, but it is enough to have some stressful factor, and a person loses the ability to concentrate.

6. **General anxiety.** It manifests itself at the *physiological level* (headaches, back pain, stomach cramps), in the *mental sphere of the individual* (constant anxiety and worry, paranoid phenomena), in *different forms of emotional experiences* (self-doubt, feeling of fear, guiltiness complex).

7. **Exaggerated response.** A person, at the slightest surprise, makes rapid movements (he/she rushes to the ground at the sound of firecrackers, turns sharply and takes a fighting position when someone approaches him/her from behind), suddenly flinches, starts to run, shouts loudly).

8. **Unwanted memories.** This most important symptom gives the combatant a right to talk about the presence of post-traumatic stress disorder. Creepy, ugly scenes related to the traumatic event, suddenly appear in the combatant's memory. These memories can be both in a dream and while the person is awake. Many veterans and their relatives note that during a sleep a person tosses in bed and wakes up with clenched fists, as if he/she is ready for a fight. Such dreams are probably the scariest aspect of post-traumatic stress disorder for the person, and people rarely agree to talk about it.

9. **Hallucinatory experiences.** This is a separate type of unwanted memories of traumatic events, with the difference that during a hallucinatory experience the events of the current moment, as if it were, recede into the background and seem less real than vivid memories. In this alienated state a person behaves as if he/she is seeing a past traumatic event again; he/she acts, thinks and feels the same as at the moment when he/she had to save his/her life.

10. **Sleep problems.** When a person is visited by nightmares, there is a reason to believe that he/she himself/herself involuntarily does not want to fall asleep, and this is precisely the reason for the person's insomnia: the combatant is afraid to fall asleep and see a terrible dream again.

Regular lack of sleep is leading to extreme nervous exhaustion, *completes the picture of post-traumatic stress symptoms.*

11. **Depression.** In a state of post-traumatic stress disorders, depression reaches the darkest depths of human despair, when it seems that there is no point and that everything is in vain. This feeling of depression is accompanied by *nervous exhaustion, apathy and a negative attitude towards life.*

12. **Suicidal thoughts.** A person often thinks about suicide or plans any action that should ultimately lead to his/her death. When life seems more frightening and painful than death, the thought of ending all suffering can be attractive. When a person reaches the point of despair, where there are no opportunities to change his/her situation, he/she begins to think about suicide.

13. **Attacks of rage.** These are not manifestations of *moderate anger*, but *explosions of rage.* Many veterans report that such attacks occur more often under the influence of *narcotic substances*, especially *alcohol.* However, they also occur in the absence of alcohol or drugs, so it would be wrong to consider intoxication as the main cause of these phenomena.

14. **"The guilt of the one who survived".** Feeling guilty for having survived difficult ordeals that cost the lives of other people is often inherent for those combatants who suffer from *emotional deafness* (inability to experience love, joy, compassion, etc.) since the traumatic event. Many victims of post-traumatic stress disorder are ready for anything to avoid being reminded of the tragedy, the death of their comrades. A strong sense of guiltiness sometimes provokes bouts of self-destructive behavior.

Therefore, it should be noted that the clinical manifestations of combat mental trauma are closely related to the nature of hostilities and the duration of stay in combat situations. Along with natural psychological reactions of anxiety and fear without signs of dysfunction of mental activity, acute reactions to stress often occur in the conditions of intense combatant activity, with a pattern of mixed and changing symptoms of *depression, anxiety, anger, despair, hyperactivity or retardation.* Against the background of the phenomena of stupor, a certain narrowing of the field of consciousness, the inability to respond adequately to external stimuli, sometimes with subsequent partial or complete amnesia, the development of acute stress reactions among the personnel negatively affects the level of combat

effectiveness of the troops and often creates an additional threat to the life of the combatant himself/herself and his/her comrades.

So, psychological assistance to combatants who received combat mental injuries of varying degrees of severity during hostilities includes *psychological support* and *psychological and physiological rehabilitation*, which differ in the subjects, objects and content of the measures. Psychological support is aimed at actualizing existing and creating additional psychological resources that ensure the active actions of servicemen on the battlefield.

Psychological and physiological prevention (in order to prevent the development of negative psychological and physiological phenomena) is carried out by psychologists of military units and unit commanders with all combatants. As dominant means of psychological and physiological correction it is used in relation to persons with symptoms of *non-pathological and pathological psychogenic reactions*.

Specialized methods and means of *psychological and physiological support* for combatants include: medicinal (pharmacological) and autogenic effects. Pharmacological methods and means of *psychological and physiological support of military personnel* consist of strengthening and correcting the psychological resources of a combatant through the use of drugs, vitamins, medicinal herbs and other medicine that have a psychotropic effect.

The experience of combat operations in Ukraine proves that pharmacological agents can be used for the purpose of: increasing the activity of actions of personnel in conditions of danger and chronic fatigue (psychostimulants); removal of excessive mental tension (relaxants); speeding up the process of combatants' adaptation to extreme living conditions, increasing performance indicators of certain mental functions.

We think that *autogenic methods of psychological and physiological support (self-help)* are the most well-known, accessible and quite effective means of regulating combatants' mental activity. They include both the simplest methods of self-regulation (soothing and mobilizing breathing; muscle relaxation by contrast; elementary formulas of self-conviction, self-suggestion, self-command, self-reinforcement), and complex psychoregulatory

complexes (autogenic training, self-hypnosis, neuromuscular relaxation and etc.).

Psychological and physiological rehabilitation, which is carried out by psychologists of military units and unit commanders, is a complex of psychophysiological, psychotherapeutic, organizational and medical measures which are used with the aim at restoring impaired (lost) mental functions and correcting the social status of combatants who have received *combat mental trauma*. Depending on *the depth of their mental disorders*, it can be carried out both directly in a combatant environment and in stationary medical institutions of the country.

Psychological and physiological rehabilitation of combatants serves such basic tasks, as:

- detection and diagnosis of mental disorders in military personnel;
- evacuation of combatants who have been psychologically traumatized from the battlefield;
- restoration of impaired (lost) mental functions;
- correction of self-awareness, self-esteem and well-being of combatants who received mental disorders and physical mutilations.

In a combat environment the activity of combatants is characterized by the constant influence on them, their psyche of stress factors of increased intensity. Over time, combatants contribute to the emergence of such changes in the person's psyche that reduce the effectiveness of combatants' activities both in a combat environment and in further peaceful life. The impact of stress factors during combatants' activities does not always negatively affect the quality of combat operations. A military serviceman is exposed to many stressful factors, not always foreseen in advance. That is, in combat conditions external energy is always more than *internal, protective energy*. At the same time, a psychological barrier is breached and excess energy, penetrates the psychological system of a person. In fact, it affects the unconscious sphere of a person.

There can be many similar situations. The influx of excess energy overwhelms the mental system of a person and causes mechanisms to neutralize it, which is not always carried out successfully. In addition, the reaction of this energy can be carried out on objects that replace the initial objects, we mean *stressors*. Our own observations show that the release of excess

energy is often manifested in the form of *unmotivated aggression* against random people, including relatives and friends. It can also affect the condition of the serviceman himself/herself: sleep disturbances, lowering of mood, vitality, self-absorption, abuse of alcohol, drugs, etc.

Failure to provide timely assistance to an injured soldier by psychologists of military units and unit commanders can lead to the emergence of mental disorders that can be eliminated only with the help of psychiatric and rehabilitation care. One of the commander's tasks follows from the above: to create the most positive conditions for the combatants to react the excess energy from the human mental system to the outside, while making this process manageable and controlled.

The psychological mechanism of this process is in such a way. With the support of the commander, a military psychologist, the combatant begins to remember what happened to him/her on the battlefield. As a rule, he/she recalls the most vivid, emotionally colored events, which inevitably lead to re-experiencing fear, reminiscent of the one the combatant experienced during combat operations. Experiencing these emotions lead to a reaction of excess, unconnected, internal energy of a person.

If described process is repeated enough times, the mental system of the warrior gradually approaches equilibrium. This concept was called cathartic by scientists [3; 6; 18].

5. CONCLUSIONS

The following methods are widely used by psychologists and rehabilitation specialists of military units and unit commanders in the practice of psychological rehabilitation of combatants who have received combat mental trauma:

- autogenic techniques (performance of mental self-regulation techniques, self-training, meditation, etc.);
- physiological methods (deep sleep, rest, quality food, drinking a lot of water, shower, field bath);
- organizational means (establishing a clear regime of work and rest, involvement of servicemen into active combat training, service, preservation of military uniform);
- medication means (sedatives, tranquilizers, antidepressants, nootropics, psychostimulants, phytotherapy, vitamin therapy, etc.);
- psychotherapeutic techniques and methods (individual and group rational psychotherapy, music, library, art, nature therapy, etc.).

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Анотація

МИХАЛЬЧУК Наталія, ХАРЧЕНКО Євген, ІВАШКЕВИЧ Едуард

РЕАБІЛІТАЦІЯ УЧАСНИКІВ БОЙОВИХ ДІЙ З ПОСТІЙНИМ ФІЗІОЛОГІЧНИМ СТРЕСОМ

Метою даної статті є визначення особливостей психосемантики учасників бойових дій з різними видами військового стресу: мається на увазі постійний фізіологічний стрес учасників бойових дій з посттравматичним стресовим розладом; показати етапи та механізми реабілітації учасників бойових дій з постійним фізіологічним стресом. **Методи дослідження.** Для розв'язання поставлених у роботі завдань використовувалися такі теоретичні методи дослідження: категоріальний, структурно-функціональний, аналіз, систематизація, моделювання, узагальнення. Експериментальним методом є метод організації емпіричного дослідження. **Результати дослідження.** Доведено, що психологічна і психофізіологічна реабілітація комбатантів послугоується такими основними завданнями, як: виявлення та діагностика психічних розладів у військовослужбовців; термінова евакуація комбатантів з поля бою, якщо вони зазнали психотравматизації; відновлення розладів (або цілком втрачених) психічних функцій; корекція самосвідомості, самооцінки і самопочуття військовослужбовців, які отримали деякі психічні розлади та певні фізичні каліцтва. **Висновки.** Показано, що досить-таки широке застосування психологами військових частин та командирами підрозділів на практиці психологічної та психофізіологічної реабілітації комбатантів, які отримали бойову психічну травму, знайшли такі засоби, методи та техніки: аутогенні техніки (переобачають виконання прийомів психічної саморегуляції, впровадження занять із аутотренінгу, медитації та ін.); психофізіологічні методи (техніки глибокого сну, відпочинку, вживання якісної їжі, великої кількості води, приймання душі, використання польової лазні); організаційні засоби (встановлення чіткого режиму роботи і відпочинку, залучення військовослужбовців до активного бойового навчання, несення служби, збереження військової форми одягу); медикаментозні засоби (вживання седативних препаратів, транквілізаторів, антидепресантів, ноотропів, психостимуляторів, фітотерапії, вітамініотерапії та ін.); психотерапевтичні техніки та методи (використання індивідуальної та групової раціональної психотерапії, музико-, бібліо-, арт-, натуротерапії та ін.).

Ключові слова: психолого-фізіологічна реабілітація, постійний фізіологічний стрес, психосемантика видів військового стресу, бойова психічна травма, корекція самосвідомості.

Стаття надійшла до редакції 09.06.2024 р.