The Role of Subconscious Effects During the Treatment of Posttraumatic Stress Disorder With Alcohol Dependencies in Military Personnel

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Abstract

In patients with Posttraumatic Stress Disorder (PTSD), alcohol dependencies develop differently than in other social groups and represent a more complex disease. Using experimental psychosemantics methods, researchers studied 33 military personnel with various habits of alcohol usage who had returned from combat areas and were receiving base therapy. Additional informed consent forms were signed by 15 patients, forming the main group, each patient of which received 10 sessions of psychosemantic correction using subthreshold stimuli; the remaining 18 patients formed the control group.

Treatment results were evaluated after 3 months and showed that the treatment of PTSD and alcohol dependencies had been more effective in patients in the main group. Key words: PTSD, alcohol dependency, personality disorder, psychosemantics, psychoprobing.
The Role of Subconscious Effects During Treatment of Posttraumatic Stress Disorder
With Alcohol Dependencies in Military Personnel.

Posttraumatic Stress Disorder (PTSD) has been a frequent problem in persons who have lived through extreme situations, especially in military personnel returning from combat areas (American Psychiatric Association, 1994). The incidence of PTSD in such subjects has been described in the literature as 10% to 95% (among heavy sufferers) and was directly dependent on the intensity of the stress. PTSD, a long term disease, is hard to treat. Many decades after World War II, 30% to 56% of former prisoners continued to suffer from symptoms of PTSD (Brahmsen, 1995).

According to several authors (Davidson, 1992; Davidson & Foa, 1993; Davidson, Hughes, Blazer, & George, 1991; Foa & Davidson, 1995), the prevalence of PTSD in persons who have spent time in war zones was between 3.6% and 75%. The corresponding epidemiological studies in the USA of veterans from the Vietnam War showed PTSD in 30% of the research subjects 15-20 years after the end of the war. PTSD was found in 15% of male veterans and in 8.5% of female veterans (Kulka et al., 1990). In participants who fought in the Afghan and Chechen conflicts, PTSD was observed in 15-25% of the former military personnel (Soloviev, 2000; Tababrina, 2001).

The most frequently exhibited outcomes of the Vietnamese, Afghani, and Chechen syndrome were the persuasive memories from the constant experience of being in a traumatic situation (fight, explosions, shots). These were exhibited not only during the night in dreams but sometimes during the day while under the influence of the startling mechanism: frightful dreams, desire to avoid past memories, feeling of catalepsy, excitability, increased vigilance (Clinical Evidence, 2003).
Traumatic stress is a special form of the general stress reaction, the normal reaction to abnormal circumstances. PTSD arose as the delayed and/or prolonged reaction to stressful events when radical aggression or threat of death (potential risk of physical destruction) was accompanied by intense emotional pressure. Such stress overloaded the psychological, physiological, adaptable abilities of the person and destroyed the individual's protection and therefore the person became traumatized. Thus, the stereotypes of personality and behavior changed. The situation in which a person was an active participant deeply experiencing the event changed the individual's personality.

Experts have distinguished a few behavioral strategies of people who have gone through mental trauma. Originally, during biological evolution, two basic reactions to stress—fight and flight—were generated. They were effective in some cases when it was necessary to fight off, for example, an aggressor (struggle) or to withdraw in time from insuperable dangers (flight). In military personnel who have suffered traumatic stress, such reactions could become fixated. Then, the person tried either to prevent hypothetical danger (and became easily excited or highly anxious) or to escape it (then there were super carefulness, irrational fears, suspiciousness, etc.).

In addition to the reaction of fight-flight, another type of behavioral reaction existed, freezing. It was a protective process of emotional discharge, when the person, powerless to undertake something, lost sensitivity and rejected the sensation of threat.

There were also other behavioral strategies. People who have experienced threats to their lives sometimes accept the internal decision to become a source of danger to their environment. A special type of personality appeared which was a result of combat trauma and also was associated with aversion of such people by society in the post-war period.
Here the major factor belonged to the aggressive personality without which it was impossible to overcome difficulties and the dangers arising during the war.

Fixated "battle reflexes" did not seem to be unusual while the person was in the war zone. However, coming back home, if the person continued to behave as if still in the war, and could not modify such behavior, the person was not accepted by society. The anomaly experienced by the subject appeared senseless. The subject had the complicated challenge of forming meanings in unfamiliar social space, the necessity of reassessing tragic experiences, correcting all systems of perception and self perception.

Veterans during the post-war period exhibited two syndromes, as a rule, and were found to feel guilty towards comrades who fell in battle while they remained alive and to feel like heroes betrayed by their country, which caused increased self-alienation and ideological disappointment.

Asthenic types, accentuated by a background of aggressive, depressive experiences during peace time, were subjectively overestimated and added to the weight of everyday stress situations. Such persons had feelings of hopelessness and inability to overcome created crisis; they were convinced they could not solve their problems. The subjects, who were keeping real or potential dominant control, were inclined to various self-destructive (auto-aggressive) behaviors, such as alcohol or drug abuse, ignoring serious illnesses, excessive work, overeating, smoking, or a passion for risky sports. Tendency to use alcohol, in the opinion of some authors, reached 76.3% in military personnel with PTSD (Chernov, 2003).

Aspiring to escape reality, these people tried to change their mental state artificially. During the use of alcohol, emotional discomfort was eliminated, anxiety
decreased, self-esteem improved. The illusion of the restoration of tranquility and compensation of an inferiority complex was achieved. Such subjects became helpless before their predilection; mental dependency and then physical dependency developed.

Alcohol dependencies in war veterans had important features which were not described in alcoholism in other social groups. For war veterans, the motivations for the consumption of alcohol were to achieve calmness, to remove the acute memory of painful experiences, to block emotional stress through suffering, and to actualize psychological trauma.

Other features were brutal forms of behavior (violence, cruelty) and heavy forms of intoxication; fast pro-gradient of alcoholic disease. A wide range of alcohol dependent behaviors were observed, from addiction to brutal-aggressive and auto-aggressive behavior, including the difficulty of treating alcohol dependency. Even without the use of alcohol in veterans, the psycho-organic syndrome developed more quickly. These represented additional factors in the reciprocal aggravation of both diseases (Musienko & Baranenko, 2003; Ouimette, Moos, & Finney, 2000; Pogosov & Smirnov, 2001).

Authors converged in opinion that alcohol dependency in PTSD was a more complex disease and exhibited deeper disturbances than usual dependencies. They considered the starting factor of the disease to be over activation of the stress-realizing systems, leading to damaging effects that fixed in the memory and transformed into pathological programs of behavior. It was not enough to treat such a disease as the usual alcohol dependency; a number of additional therapeutic actions were required, which were previously mentioned: reconciliation with the past, deleting the effects of the past; training to work with their present modality, reconstruction of the future.
In spite of the fact that in all patients with PSTD there were enough common symptoms to classify it as a separate disease, the treatment should be individually designed. Presently, effective treatment of PTSD has been convincingly proven during randomized control studies using methods of cognitive-behavioral therapy, mental desensitization by means of eye movements and repeated experiences of the psychological traumatic events, and usage of parocsetin or sertraline (Clinical Evidence, 2003).

Despite all this, it has been shown in the literature that medicine could induce undesirable side effects. Pitman, Altman, and Greenwald (1991) described six cases of aggravation of depression, renewal of the abuse of alcohol, and relapse of panic episodes. A number of publications described the difficulties in selecting treatments for the patient and the complexity of predicting the results of therapy (Solomon & Davidson, 1997; Solomon, Gerrity, & Muff, 1992). It was also known that benzodiazepine type tranquilizers used in the treatment of PTSD were capable of breaking the processes of training and memory, suppressing the active adaptation of an organism (Larikova, Chervyakova & Salnikov, 2002; Petrov, 1997; Voronina, 1992; Voloshin, 2004).

Therefore, the exclusively important role in the treatment of PTSD aggravated by alcoholic dependencies was allotted to the psycho-correction of the personality disorder (Greenson, 1972). The strategy of psychotherapy should include not only procedures of suggestion directed by general psycho-emotional relaxation and development of indifference and disgust for alcohol but also procedures to influence the roots of mental and behavioral disorders (Perls, 1969), such as reconciliation with the past, deleting
effects of the past, training to work with the modality of the present, and reconstruction of the future (Melges, 1982).

Recently in applied psychology, the methods of experimental psychosemantics have been significantly advanced (Smirnov, Beznosjuk, & Zhuravlyov, 2005). These methods allowed, at the level of the subconscious mind, estimation of the importance of semantic elements of human mentality, built a hierarchy of basic motives of the behavior, and allowed the precise diagnosis of changes in personality.

It has been shown that procedures based on the analysis of the speed of complex visual-motor reaction\(^1\) in response to presentation of various semantic stimuli in a subthreshold range allowed the investigation of the semantic nucleus of the human

\[^1\] When a person responds to something she/he sees, the total reaction time can be decomposed into a sequence of components.

1. Mental Processing Time. This is the time it takes for the responder to perceive that a signal has occurred and to decide upon a response. For example, it is the time required for a patient to detect the row of numbers on the computer screen and make decision to press a button. Mental processing time is itself a composite of four sub-stages:
   a. Sensation: the time it takes to detect the sensory input from an object. This stage likely does not result in conscious awareness.
   b. Perception/recognition: the time needed to recognize the meaning of the sensation. This requires the application of information from memory to interpret the sensory input. In some cases, "automatic response," this stage is very fast (simple reaction). In others, "controlled response" (complex reaction) it may take considerable time.
   c. Situational awareness: the time needed to recognize the scene objects and layout, extract it's meaning and possibility extrapolate into the future.
   d. Response selection and programming: the time necessary to decide which if any response to make and to mentally program the movement. ("I should or should not press the button"), electrophysiological studies show that most people exhibit preparatory muscles potentials prior to the actual movement. In other words, the decision to respond occurs appreciably faster than any recordable response can be observed or measured. These four stages are usually lumped together as "perception time," a misnomer since response selection is decision, not perception.
2. Movement Time. Once a response is selected, the responder must perform the required muscle movement. For example, it takes time to press the button.
personality (Smirnov, Beznosjuk, & Zhuravlyov, 2005) and revealed initiating factors for PTSD and the dominating pathological alcohol motive.

According to published sources, many authors have shown repeatedly in experiments the ability of conditional reflexes to activate the decision-making process and the ability to change the connections between semantic fields using subsensory stimuli (Kostandov & Arzumanov, 1978). These circumstances have encouraged the researchers to investigate the ability of the subconscious and its effects in correction of pathological processes of a patient's psyche with PTSD suffering from alcohol dependencies.

**Materials and Methods**

The authors investigated 33 military personnel who had taken alcohol; their average age was 23.5 + 1.1 years. All of them received medical treatment either for trauma (15 persons with trauma to the lower and upper extremities, 4 with no penetrating fragmental wounds of the scull but with concussion syndrome), surgical treatment (3 persons with penetrating wounds of the thorax, 6 with wounds of the abdominal cavity), and neurological treatment (5 persons with wounds of the peripheral nerves of the upper extremities) in corresponding departments of the military hospital. All had the accompanying diagnosis of PTSD. PTSD had the following clinical symptoms: unmotivated vigilance, general apprehension, attacks of fury, aggression, explosive reactions, dull emotions, memory disorders, concentration of attention disorder, depression, persuasive uninvited negative memories, delusional suffering, sleeplessness, suicidal thoughts, survivor’s guilt, and alcohol abuse.
All patients studied took alcohol in attempts to alter posttraumatic symptoms; 14 patients ingested alcohol a few times per week (3 to 5 drinks), 11 drank at least once per week to a degree of heavy intoxication, and 8 patients also drank heavily for 2-3 days in a row. Nineteen patients (58 %) had been clinically diagnosed with the syndrome of alcoholic dependency stage1 by a group of psychiatrists (specialists in substance abuse) according to established methodology2 published by Entin (1990) and Churkin and Martjushov (2000). Fourteen patients (42 %) had not been diagnosed as being alcohol dependent by the same group of psychiatrists.

All patients received the same base therapy: a single dose of Paxil, 20mg in the morning during breakfast; Alprazolam1 mg once a day in the evening for a month. All of the patients were also in individual and group psychotherapy in frameworks of lifeline analysis 3 times per week for 12 sessions.

The hospital’s Ethics Committee approved the research paradigm. Informed consent was obtained from all of the patients for the application of psychosemantic methods for diagnosis, and additional consent forms were signed by 15 patients chosen

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2 Clinical diagnoses are based on questioning the patient, his friends and relatives. Following are 6 symptoms which Psychiatrist, specialized in drug and alcohol addictions, uses to diagnose stage 1 alcohol addiction:
1. Usage of alcohol twice a week in amount of 250-500 ml.
2. Need for alcohol in the dose to become drunk and achieve a state of euphoria or a treatment for hang-over.
3. High tolerance to alcohol with the loss of vomiting defense reaction to alcohol.
4. Increase in the length of being drunk up to 8 hours with periods of amnesia, state of mind changes from euphoria to aggression.
5. Loss of control for quantity of alcohol ingestion and usage in appropriate situations (for example: during driving).
6. Increase in amount of alcohol usage with decrease of other human needs. Appearance of pathological traits, the person becomes boastful, callous, troublesome, deceitful, weak will, impudent.
randomly for correction of their condition. These patients were assigned to the main
group; the remaining 18 were assigned to the control group.

For the psychosemantic diagnosis of the semantic nucleus of the personality and
discovery of factors for PTSD and for dominating pathological motives for alcohol abuse,
the researchers used computer psychosemantic analysis, which was based on the
principles of psychoprobing (patent #2218867). It represented the mathematical analysis
of the event related reactions tested in response to a presentation of consciously
unrecognizable test stimuli to the subject being tested.

Test stimuli were specially picked and grouped as semantically meaningful words, short
phrases, and/or images. Then, by disguising the stimuli, the words were presented
consciously unrecognizable. Such an approach overcame censorship of the conscious
mind to determine which test stimuli were personally significant for the subject being
tested and to carry out the diagnostics of the motivational realm of the individual being
tested (Smirnov, Beznosjuk, & Zhuravlyov, 2005). The event related registered reaction
was a complex visual-motor reaction, which was simple, noninvasive, and highly
reliable.

All semantic test stimuli shown were referred to as the semantic base (SB). In the
semantic base (SB) program, stimuli of similar semantic values were incorporated into
groups (topics): alcohol, fear, etc. The sequence of presentation of the stimuli from the
semantic base (SB) was set so that each group was equally spread throughout the
procedure. For the test, the researchers set not only the sequence of presentation of the
stimuli but also the mode of presentation in combination to the type of expected reaction.
The visual stimuli bearing semantic meaning were shown on the computer screen between 16 and 40 msec.; this was not enough time for the subject's conscious recognition, though the visual analyzer (eyes – visual cortex system) registered it. Right after the semantic stimuli appeared on the computer screen for 500 msec., a string of numbers (masker) whose purpose was to interfere with the formation of an image trace of the semantic words/stimuli on the retina. The examinees pressed the push button when they saw a string of numbers. The time of the visual-motor reaction for the combined stimuli was registered as "word + numbers." The meaning of the word to the subconscious mind influenced this time. The reaction was measured as the time from the moment the subconscious stimulus was presented until the moment the button was pressed. The average time of reaction in each semantic group reflected the subconscious (true) attitude of the examinee to the given topic.

Besides semantic stimuli, the examinee was shown strings of random numbers, which did not bear any meaning. The average time of this reaction for these stimuli was calculated and used for comparison for further analysis with the average time of reaction for the various semantic topics.

The regime for psychosemantic corrections in the patient did not differ from a regime of psychosemantic diagnosis. The same operational activity tasks with the computer were used, the instructions “not to press” a button for some words and “to press” for others, the same system of punishments for mistakes (a loud voice command transmitted through the headphones when a mistake was made). The only differences consisted in the algorithm of the presentation of the stimuli.
The correction procedure was introduced in two different ways. The first was directed to cancel the priority of the dominating pathological motive. The cancellation was achieved using subthreshold stimuli, superimposing (presenting together or one after another) the concepts, uncovered during testing, with subjective positive value (for example, "vodka" with one’s own name) with the concept and with subjective negative values ("fear of death", “cobra”). The results of such influence were to attain reflexive leveling of the significance of these concepts (reduction of a positive degree of one concept and reduction of a negative degree of another). This approach was taken from techniques of superimposition, or collapse of anchors, from neurolinguistic programming (NLP) (Bandler & Grinder, 1979).

The second correctional approach consisted of the presentation in subthreshold mode of short, precise, individual plots of suggestion (word combinations) that defined a desirable direction and the character of behavioral change of the person in the present and the future. Phrases included the following, as well as others: all unpleasant experiences have remained behind as in one’s read and forgotten book; forgive everybody and God will forgive you; alcohol craving has completely disappeared; all alcohols are indifferent and disgusting; all alcohols have an awful smell and disgusting taste; all thought about alcohol causes disgust; pleasure only in a sober life; you are the strongest, quietest, confident man; you love life.

Each patient in the main group had ten 60 to 90 minute sessions of psychosemantic correction. The effectiveness of the PTSD treatment and alcoholic dependencies in all patients was evaluated by observation of the dynamic changes in the clinical picture of the disease. The changes of motivation were evaluated using the
semantic differential technique (Osgood, Susi, & Tannenbaum, 1957) before treatment and 3 months after the treatment.

The semantic differential technique in practical psycho-diagnostics was used to study an individual's system of subjective values for various objects. This was done by uncovering unconscious associative connections between the objects. The following ideas were used as the psychosemantic objects: life, death, alcohol, fear, self-image present, and self-image in the future. During the treatment, changes in distances from self-image present to death, life, alcohol, and fear and from self-image in the future to death, life, alcohol, and fear in the subconscious mind of the examinees were measured.

For calculation of the statistical data the STATISTICA program (StaSoft) was used; Student's distribution calculations were applied (Spiegel, 1992). The hypotheses were accepted at 95% significance. The controlled variable in the study was having basic treatment provided to both groups, control and main. The independent variable was having psychosemantic correction applied to the main group. Dependent variables were psychosemantic object ideas: fear, fear of death, fear of captivity, fear of injury, alcohol, vodka. To validate results of psychosemantic analysis and the role of psychosemantic correction of PTSD patients, clinical analysis and the method of Semantic Differential by Osgood (1957) were used.
Results

Investigation of the patients before the treatment.

As a result of the diagnosis of the individual psychosemantic spaces\(^3\) at a subconscious level in 14 patients (93 %) in the main group and 16 of patients (89 %) in the control group, the expressed subconscious reactions to the word "fear" (Table 1) were registered.

When fear was investigated in more detail, it was found that 24 (73 %) patients (11 from the main group and 13 from the control group) showed significant response \((p<0.05)\) to the word combination “fear of death,” which, most likely, was the consequence of the transferred battle trauma with fear of death, underlying the current psychopathological dependent behavior. Other kinds of fear were registered less frequently \((p <0.05)\): fear of captivity and fear of wound composed 52 % of the main group and 42 % of the control group (Table 1).

In both groups of patients, significant differences in the average speed of complex visual-motor reactions \((p <0.05)\) were observed when the words "alcohol" and a group of indifferent words were tested and compared (Table 1).

To validate the data obtained from subconscious semantic response measurements, the diagnosis of the individual systems of the subjective values of various topics (fear, alcohol, life, death, self-image) for patients using the method of semantic differential by Osgood et all (1957) was calculated and presented in Figure 1.

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\(^3\) Psychosemantic space is the reconstruction of the individual system of meanings, through which the subject perceives the world, other people, him or her self, and where its genesis, structure and functioning could be studied. The description of the internal image of the world of the single subject, specific character of the system of personal values, description of stereotypes of interpersonal perception and behavior.
The closeness of the distances in the semantic space between the points of concepts of self-image presently and fear (1.9 in the main group and 2.3 in the control group), self-image in the future and death (3.9 in the main group and 5.8 in the control group) testified to the high apprehension levels in the patients, with the presence of fear and the sensation of no positive vision of the future (Figure 1).

The statistical analysis of both the parameters of the subconscious diagnosis and semantic differential by Osgood et al. (1957) have shown the absence of significant statistical differences (p > 0.05) between the main and control groups. These suggested that both groups were from the same population and, therefore, the division of patients into these groups was arbitrary.

*Investigation of the patients 3 month after treatment.*

After the treatment, the patients of both groups were subjected to the same diagnostic processes as before the treatment. The results of psycho-probing of the individual psychosemantic spaces using subconscious stimuli have been shown in Table 2.

In the main group, the subconscious reactions to the testing word "fear" were registered only in 3 (20\%) \([t(28)=2.106 \ p<0.05]\) and to “fear of death” only in 2 (13 \%) \([t(22)=2.674 \ p<0.05]\) patients, which was significantly less than in the control group (Table 2). In the presentation of the words "alcohol" and "vodka," significant reactions in the main group were observed much less often (13\% and 20\% respectively) than in the control group (28\% and 33\% respectively) \[“alcohol” \ t(20)=2.700 \ p<0.05; “vodka” \ t(22)=2.100 \ p<0.05]\ (Table 2). In other words, in these categories significant changes were not observed. As treatments in groups of patients differed only by the presence of an
additional method of treatment in the main group, results of the significant improvement in the main group could only be attributed to the subconscious influences of the additional treatment.

The results of the semantic differential test of the main group have been presented in Figures 2 and 3, showing changes of the average semantic distances in the subconscious minds of the patients for the concepts fear, alcohol, life, and death before and after the treatment. Note the positive dynamics of all parameters after treatment in both groups. The information in Figure 2 reflected the current self evaluation of the patient (the beginning of coordinates corresponded to a point self-image presently).

The data in Figure 2 showed an increase in semantic distance from the point of self-image (the beginning of coordinates) to concepts of fear, alcohol, and death after treatment ($p < 0.05$). In comparison with the control group, significant differences were observed only for the concepts of fear and alcohol, which were increased ($p < 0.05$). The technique of imposing subconscious stimuli (anchoring) used in the main group definitely had an effect on deleting effects of the past and reconstruction of the present.

Figure 3 presented the semantic distances after the treatment from the point of self-image in the future (the beginning of coordinates). There were also reliably significant increases in the semantic distance for the concepts of fear, alcohol, and death in comparison with the state of mind before treatment ($p < 0.05$). In comparison with the control group, the significant differences concerning distances for life decreased ($p < 0.05$) and the distance for death increased ($p < 0.05$). Such results testified to patients' greater hope for the future and the effectiveness of positive treatment by suggestion directed to reconstruction of the future presented on a subconscious level. Thus, the
semantic differential test, investigating the psychosemantic spaces of the patients, confirmed better results in the main group on reconstruction of modalities of the past, present, and future in comparison with the control group (p <0.05).

Clinical improvements were observed in both the main and control groups. In the control group, an alcoholic dependency continued in 2 patients, who showed hard drinking patterns of 2 to 3 days per month. Incidental controllable dosages of drinking alcohol and related behaviors were observed in 5 patients in the control group, and 1 patient had no improvement and was diagnosed as alcohol dependency stage 1. The other 10 patients in the control group showed indifference to alcohol (Table 3).

In the main group, the periodic consumption of alcohol was revealed in 2 patients, who had drunk twice for 3 months in a controlled dose up to 150 ml (Table 3). Reactions in the other 13 patients were expressed aversion to alcohol. Persuasive memoirs, dreadful dreams, feelings of catalepsy, excitability, and high vigilance had stopped. Real optimistic plans for the future appeared, including intentions to continue studies and complete their education.

During work with these patients, the researchers noted that a connection could be traced between the level of comprehension of the meaning of life and the level of socio-psychological adaptability. Those who learned to find purpose in life or those individuals, who considered that persons were capable of controlling their lives, freely made decisions and acted on them, successfully overcoming the profound consequences of PTSD and alcohol dependency.
Discussion

The results of treatment in both groups were positive; however, the best results of the treatment were observed in the main group (p < 0.05), providing evidence that PTSD is a disorder affecting many mental and physiological levels of the temporal prospective. Therefore, to increase efficiency, correctional work should be based on the profound analysis of mental condition of the patient to influence the roots of mental and behavioral disorders, such as reconciliation with the past, deleting effects of the past, training to work with a modality of the present, and reconstruction of the future.

The method of the analysis of the changes of the complex visual-motor reactions to subconscious stimuli allows understanding of the real mechanism of formation of the pathological need for alcohol, the changes of the hierarchy of basic motives, underlying the diseases. The treatment, using the subconscious stimuli, allows artificial changes to the internal picture of the patient’s world and the importance of semantic elements of the individual's psyche in all temporal modalities (Table 4).

The method allows not only precise diagnosis of the changes of the patient’s personality but also treatment of them both pathogenically and etiologically; for example, canceling the priority of the dominating pathological motive of alcohol and appointing a priority of motivation of achievement of a socially comprehensible goal.

Conclusions

The researchers suggested a technique for the diagnosis and treatment of patients with PTSD and alcohol dependencies, which was capable of studying the psychosemantic nucleus of the personality to investigate mechanisms of pathological mental processes and to carry out pathogenic and etiological treatment of patients in all temporal
modalities necessary for effective treatment of such conditions. The results of psychoprobing of the individual psychosemantic spaces, after treatment with the subconscious stimuli, in the main group showed an authentic reduction of the quantity of the subconscious reactions to the words “fear,” “fear of death,” “alcohol,” and “vodka” in comparison with the control group.

The semantic differential test studying the changes of the psychosemantic spaces of the patients showed the best results in the main group on reconstruction of modalities of the past, the present, and the future in comparison with the control group.

The clinical diagnosis after treatment in the main group with only periodic consumption of alcohol was revealed in only 2 patients and 13 patients exhibited an expressed aversive reaction to alcohol, whereas 8 patients in the control group showed various degrees of alcohol dependencies and 10 patients expressed indifference to alcohol.

Thus, the method of analysis of the changes of the complex visual-motor reactions to the subconscious stimuli can be used in complex treatment therapy of alcohol dependencies in military personnel with PTSD.
References


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Table 1

*Differences in Subconscious Reactions to Tested Words Before Treatment (p <0.05)*

<table>
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<tr>
<th>Testing Words</th>
<th>Main Group</th>
<th>Control Group</th>
<th>Total</th>
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<td>Fear of captivity</td>
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<tr>
<td>Fear of injury</td>
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<td>8</td>
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<tr>
<td><strong>Topic Alcohol</strong></td>
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<td><strong>Total</strong></td>
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Table 2

*Differences in Subconscious Reactions to Tested Words after Treatment*

<table>
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<td><strong>Total</strong></td>
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<td>100</td>
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Note: Significant differences between the main and control groups are marked * p<0.05.
Table 3

*Dynamics of the Alcohol Dependencies Changes for Main and Control Groups*

<table>
<thead>
<tr>
<th>Groups</th>
<th>Stopped using alcohol</th>
<th>Using alcohol once per week (social drinking, controlled dose)</th>
<th>Alcoholic stage 1 diagnosis</th>
<th>Hard drinking pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control group before treatment</td>
<td>0</td>
<td>8</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Control group after treatment</td>
<td>10</td>
<td>5</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Main group before treatment</td>
<td>0</td>
<td>6</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Main group after treatment</td>
<td>13</td>
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<td>0</td>
<td>0</td>
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</table>
Table 4

*Method of Subconscious Influence Works in All Temporal Modalities*

<table>
<thead>
<tr>
<th>Modalities</th>
<th>Earlier applied methods</th>
<th>Method of subconscious influence</th>
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<tr>
<td>Modality of the</td>
<td>Psychoanalysis</td>
<td>Erasing effects of the past</td>
</tr>
<tr>
<td>past</td>
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<td></td>
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<tr>
<td>Present modality</td>
<td>Gestalt therapy</td>
<td>Changes of hierarchy of the basic motives, assigning priority motivation to achieve a socially acceptable goal</td>
</tr>
<tr>
<td>Modality of the</td>
<td>Psychotherapy by</td>
<td>Individual fables</td>
</tr>
<tr>
<td>future</td>
<td>Melges (1982)</td>
<td></td>
</tr>
</tbody>
</table>
Figure Captions

*Figure 1.* The average distances shown between the objects of the psychosemantic spaces for patient’s self-image in present and in the future of the main and control groups before treatment using semantic differential.

*Figure 2.* Results of the semantic differential test for patient’s self-image in present before and after treatment. The average distances shown between the objects of the psychosemantic spaces for patients of the main and control groups.

*Figure 3.* Results of the semantic differential test for patient’s self-image about future before and after treatment. The average distances shown between the objects of the psychosemantic spaces for patients of the main and control groups.
Figure 1
Figure 2

<table>
<thead>
<tr>
<th></th>
<th>Main Group</th>
<th>After Treatment</th>
<th>Control Group</th>
<th>SELF-IMAGE PRESENT</th>
<th>Main Group</th>
<th>Before Treatment</th>
<th>Control Group</th>
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</thead>
<tbody>
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<td>&quot;Fear&quot;</td>
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<td>4.5</td>
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<td>1.9</td>
<td>2.3</td>
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<td>&quot;Alcohol&quot;</td>
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<td>6.1</td>
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<td>21.6</td>
<td>23.1</td>
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<td>&quot;Death&quot;</td>
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<td>18.5</td>
<td></td>
<td>7.2</td>
<td>5.9</td>
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Figure 3

<table>
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<tr>
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<th>Control Group</th>
<th>SELF-IMAGE FUTURE</th>
<th>Main Group Before Treatment</th>
<th>Control Group</th>
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<tr>
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<td>3.9</td>
<td>5.8</td>
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