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COMPARATIVE ANALYSIS OF COPING CAPACITY IN PARTICIPANTS OF MILITARY ACTIONS WITH EYES INJURY AND PARTIAL VISION LOSS AMIDST PSYCHOLOGICAL MALADAPTATION OR POST-TRAUMATIC SYNDROME

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ПОРІВНЯЛЬНИЙ АНАЛІЗ КОПІНГУ У УЧАСНИКІВ БОЙОВИХ ДІЙ З ТРАВМОЮ ОЧЕЙ І ЧАСТКОВОЮ ВТРАТОЮ ЗОРУ НА ТЛІ ПСИХОЛОГІЧНОЇ ДЕЗАДАПТАЦІЇ АБО ПОСТТРАВМАТИЧНОГО СИНДРОМУ

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Abstract

The aim of this work was a comparative study of coping strategies in participants of military actions with eyes injury and partial loss of vision amidst clinical manifestations of psychological maladaptation or post-traumatic syndrome in order to determine further targets for medical and psychological rehabilitation measures.

Under the condition of informed consent with adhering to the principles of bioethics and deontology during 2014–2018 years, 191 participants of military actions (PMA) were examined. The age of the surveyed was 20–53 years. For comparison, the study included 59 men with partial loss of vision (PVL) due to household injuries which made the comparison group (CG). All respondents were screened for a mental state using a clinical diagnostic scale CAPS (Clinical-administered PTSD Scale), a questionnaire for determining the level of neuroticism and psychopathisation, they were consulted by a psychiatrist and a psychodiagnostic study was carried out. The following study groups were formed. Major groups: (MG1) – 54 PMA with eyes injury and PVL due to participation in military actions with clinical manifestations of post-traumatic syndrome; (MG2) – 49 PMA with eyes injury and PLV due to participation in military actions with manifestations of psychological maladaptation. Comparison groups: group 1 (CG1) – 46 PMA with clinical manifestations of post-traumatic syndrome; group 2 (CG2) – 42 PMA with psychological maladaptation; group 3 (CG3) – 59 men with PLV due to household injuries.

The study found the following. With the phenomena of psychological maladaptation in the emotional, cognitive and behavioral areas, unproductive and relatively productive coping strategies dominated. They were accompanied by changes in behavioral and communicative levels, decrease in adaptive capacity of the personality and predisposition to asthenic manifestations. Eyes injury amidst psychological maladaptation is accompanied by the development of unproductive and relatively productive coping strategies on the cognitive, emotional and behavioral levels. This was accompanied by deterioration of the level of behavioral regulation and asthenic reactions. A significant advantage of unproductive emotional coping strategies with manifestations of post-traumatic disorder was found. Their use by the person led to the deterioration of behavioral and diffuse disorganization of cognitive coping strategies. According to the outputs of the personal questionnaire "Adaptability", this was accompanied by a deterioration of cognitive potential. Eyes injury with partial loss of vision amidst the clinical manifestations of post-traumatic syndrome leads to a deterioration of productivity of the formed coping strategies. These disorders are also much more manifested than an injury amidst psychological maladaptation. Maladaptation disorders have no differences and dependence on the phenomena of psychological maladaptation or clinical manifestations of post-traumatic syndrome.

The obtained results will be taken into account when creating specialized highly-target approaches to medical and psychological rehabilitation for this contingent.

Key words: post-traumatic syndrome, psychological maladaptation, clinical symptomatology, stress, eyes injury, military actions.

Introduction

To date, battlefield injuries to the visual organ are considered one of the most severe in terms of prognosis for the restoration of social functioning and the absence of restrictions on patient's life. As of 2017 (according to the data of ophthalmology clinic of the National Military Medical Clinical Center), the structure of ophthalmic injuries in 52% is caused by shrapnel and other mechanical injuries [1, 2]. In case of partial loss of vision due to injury to the eye because of injury in military actions, the injured person is exposed to powerful stress factors that affect the mental health of the victim [3]. The interaction of these factors, their mutual influence forms a complex of psychic manifestations of somatic trauma that can develop in two clinical and psychological variants: the phenomena of mental / psychological maladaptation that develop through the change of civilian lifestyle to military one and participation in military actions, and also psychopathological way to respond to stress in the form of post-traumatic syndrome, the symptoms of which with their expressiveness and spectrum, do not correspond to the diagnosis of post-traumatic disorder, which does not provide an opportunity to form such a clinical diagnosis [4].

Noting that the impact of each factor is different, the importance of exploring their interaction in the development of new coping strategies is undeniable. Therefore, there is an urgent need to analyze the structure and interaction of new coping strategies in participants of military actions with partial loss of vision of traumatic genesis amid the phenomena of psychological maladaptation or post-traumatic syndrome in order to develop specialized approaches to medico-psychological rehabilitation of those, because neglect of features of new copying strategies leads to ineffectiveness of rehabilitation work with this contingent.

The aim of the study

The purpose of this work was a comparatively study of coping strategies in participants of military actions with eyes trauma and partial vision loss amidst clinical manifestations of psychological maladaptation or post-traumatic syndrome with the identification of further targets for medical-psychological rehabilitation measures.

Contingent and research methods

Under the condition of informed consent with adhering to the principles of bioethics and deontology during 2014–2018 years, 191 participants of military actions (PMA) were examined. The age of the surveyed was 20–53 years. For comparison, the study included 59 men with partial loss of vision (PVL) due to household injuries which made the comparison group (CG). Thus, a total of 250 people participated in the study. Candidates with clinically drawn and formally

diagnosed brain injuries that could have preceded or accompanied the trauma of the eye were not included in the study. In addition, persons with officially established mental illness, including alcoholism, drug and substance abuse, did not participate.

All respondents were screened for a psychiatric state using the CAPS (Clinical-administered PTSD Scale) [5], the Neuroticization and Psychopathization Level (NPL) questionnaire [6], and a psychiatrist consulting.

The identified clinical manifestations of post-traumatic disorder in their spectrum were close, but did not fully meet the diagnostic criteria of clinically defined PTSD, so they were described as "manifestations of post-traumatic syndrome". Those who have received a household injury, had no clinically identified psychopathology found out by a psychiatrist. The study of the mental state was conducted in 6-7 months after rapid intervention in persons with traumatic injuries of eyes and after participation in military actions and demobilization of their participants.

These results were the basis for the formation of study groups. Therefore, the following study groups were formed. Main groups: (MG1) - 54 participants with eye trauma with partial loss of vision as a result of engaging in military actions with clinical manifestations of post-traumatic syndrome; (MG2) - 49 participants with eyes injury and partial loss of vision as a result of engaging in military actions and with signs of psychological maladaptation. Comparison groups: group 1 (CG1) - 46 participants of military actions with clinical manifestations of post-traumatic syndrome, group 2 (CG2) - 42 participants of military actions with psychological maladaptation; group 3 (CG3) - 59 men with partial vision loss due to household injury.

In addition to the clinical diagnostic study, participants underwent a psychodiagnostic examination. The study used the following techniques: "Diagnostics of E. Haym's coping strategies" [7] and "Multi-level personal questionnaire" Adaptability" (MPQ-A) [7]. The results of the study were processed by statistical analysis and by multivariate statistics – factor analysis (principal components method). Before the use of factor analysis the data were checked for multidimensional normality for the distribution of variables. The criterion for the adequacy of the Kaiser-Meyer-Olkin sample was established, characterizing the degree of applicability of factor analysis to this sample; Barlett's sphericity criterion, level of significance. Subsequently, an analysis of the features that formed and were part of the established factors was made.

Results of the study and their discussion. As a result of the factor analysis of behavioral strategies in the participants of the study groups a factor structure was revealed, for

the study of which 4 factors were taken. Other factors were not processed due to their low factor load, which allowed them to be ignored. The factor structures analyzed in the study are shown in Table 1. Their names resulted from the vast majority of components that were relevant to the study groups and reflected their characteristics.

Table 1

Factor structure of coping strategies in victims with combat visual trauma with partial vision loss with different options for psychopathological response

№	The name of the factor	Factor load
1	Coping strategies for combat eye trauma with partial vision loss amidst psychological maladaptation	27,163
2	Coping strategies for psychological maladaptation through participation in military actions	22,547
3	Coping strategies for post-traumatic syndrome as a result of engaging in military actions	18,248
4	Coping strategies for combat eye trauma with partial vision loss amidst the manifestations of post-traumatic syndrome	12,541

The structures and indicators that formed the characteristics of these factors are presented in Tables 2 - 3.

Table 2

Results of diagnostics of coping strategies by E. Haym's method, GPA ±m

Strategy		Groups				
		MG1	MG 2	CG1	CG2	CG3
1		2	3	4	5	6
A. Cognitive coping strategies						
Disregard	R	0	8,45 ±4,31	16,45 ±4,36	16,21 ±4,43	8,40 ±4,47
Obedience	U	23,17 ±4,31	13,60 ±4,68	12,27 ±5,31	19,43 ±5,36	37,05 ±4,63
Dissimulation	R	0	0	18,07 ±4,03	0	0
Self-control	R	17,46 ±4,29	26,52 ±4,76	10,37 ±3,35	21,93 ±4,78	18,52 ±5,24
Problem analysis	P	8,12 ±4,63	0	14,04 ±4,06	16,34 ±4,35	08,17 ±5,02
Relativity	R	0	7,58 ±4,79	0	0	21,67 ±5,32
Religiosity	R	0	0	0	0	0
Confusion	U	22,53 ±4,05	23,51 ±4,69	0	17,23 ±4,52	08,07 ±4,21
Making sense	R	0	0	09,47 ±3,89	11,34 ±5,25	0
Setting self-evaluation	R	30,46 ±4,73	23,15 ±5,06	21,60 ±4,83	0	0
B. Emotional coping strategies						
Protest	R	23,31 ±5,01	8,24 ±5,03	8,30 ±4,34	22,05 ±4,06	0
Emotional discharge	U	18,24 ±4,06	24,20 ±4,32	26,54 ±4,03	11,53 ±4,62	21,35 ±4,18
Suppression of emotions	U	16,31 ±3,52	24,36 ±4,35	17,70 ±4,53	13,17 ±4,42	30,54 ±4,62
Optimism	P	0	0	0	0	0
Passive	R	8,53 ±4,23	0	0	18,17 ±4,32	18,33 ±5,00

cooperation						
1		2	3	4	5	6
Obedience	U	18,70 ±5,23	20,45 ±4,51	12,08 ±4,35	0	24,07 ±4,03
Self-blame	U	17,04 ±2,68	0	17,16 ±5,04	10,32 ±5,03	07,88 ±4,08
Aggressiveness	U	0	24,84 ±5,17	20,18 ±4,07	26,62 ±4,31	0
C. Behavioral coping strategies						
Distraction	R	8,37 ±4,03	21,24 ±5,03	25,35 ±3,27	16,63 ±4,37	19,50 ±4,82
Altruism	R	0	0	0	0	0
Active avoidance	U	23,18 ±4,53	24,16 ±4,35	14,12 ±4,35	30,17 ±5,12	12,70 ±4,09
Compensation	R	31,56 ±5,02	14,46 ±5,04	26,03 ±4,18	22,12 ±4,17	6,06 ±3,74
Constructive activity	R	0	23,08 ±4,62	0	0	10,07 ±4,47
Retreat	U	28,20 ±3,36	0	28,14 ±4,07	23,06 ±4,07	0
Cooperation	P	0	0	0	0	32,45 ±5,36
Find help	R	10,25 ±4,03	18,07 ±4,72	7,09 ±4,38	9,12 ±4,07	21,30 ±4,53

Note. Types of coping: R – relatively productive. U – unproductive. P – productive.

Table 3

Results of the study on the multi-level personal questionnaire "Adaptability", GPA±m

Scales	Groups				
	MG1	MG2	CG1	CG2	CG3
Behavioral Regulation (BR)	43,41 ±3,02	32,63 ±2,12	26,37 ±1,78	29,06 ±1,63	11,24 ±1,62
Communicative potential (CP)	21,25 ±1,64	15,06 ±1,57	24,07 ±1,38	20,13 ±1,34	5,21 ±1,33
Moral normativity (MN)	14,52 ±1,22	12,03 ±0,72	12,46 ±1,07	10,43 ±0,92	6,42 ±0,89
Personal adaptive capacity (PAC)	47,83 ±2,05	38,57 ±2,06	49,64 ±1,89	44,36 ±1,45	16,34 ±1,17
Asthenic reactions and states (ARS)	33,04 ±1,68	36,62 ±1,54	22,54 ±2,12	23,73 ±2,05	14,31 ±0,91
Psychotic reactions and states (PRS)	21,78 ±1,04	13,46 ±0,82	13,34 ±0,97	10,73 ±0,92	3,04 ±0,96
Disadaptation disorders (DD)	43,03 ±1,12	42,24 ±1,86	36,67 ±1,08	36,97 ±1,32	32,96 ±1,24

It is advisable to start the analysis of the obtained results from the background, against which the corresponding coping strategies were formed. This is a study of the components of the factor *"Coping strategy in psychological maladaptation through participation in military actions"*, which corresponded to the participants of CG2, in which the manifestations of psychological maladaptation were established. Indicators obtained from the diagnostic test of coping strategies by E. Haym's were analyzed as signs. According to the methodology,

cognitive, emotional and behavioral coping strategies were analyzed. They were evaluated and designated by us as: productive – those that ensure the effectiveness of application regardless of stressful situations; relatively productive – those that did not show effective results in all stressful circumstances, and in some - were not effective. Finally, those that were ineffective in the use of personality in any difficult life circumstances are unproductive. CG2 participants were dominated by relatively productive and unproductive cognitive coping strategies. Against this background, there have been isolated instances of productive strategies in the "problem analysis" category. Compared to CG3, they had a lower level of "submissiveness" and a higher level of "self-control". Among the emotional coping strategies in CG2, relatively productive ones were dominated by "passive cooperation" and "protest" and unproductive ones – by "aggressiveness".

Compared to CG3, the latter were dominated by "suppression of emotions" and "obedience". Among the behavioral strategies in CG2, the non-productive "active avoidance" and "retreat" strategies, a relatively productive "compensation" method prevailed. Participants in the CG3 have the advantage of a productive "cooperation" mode and a relatively productive "help-seeking" approach.

The study of the features of the component of the multi-level personal questionnaire "Adaptability" in the participants of CG2 showed significantly high levels on the scales "Behavioral regulation" and "Communicative potential" in comparison with CG3. This was characterized by a low level of behavioral regulation, a tendency to mental breakdowns, a decrease in the adequacy of self-evaluation and an adequate perception of reality. At the same time, there was a low level of communication opportunities, which was manifested by the difficulty of contacts with others, a manifestation of aggressiveness, increased conflict. The manifestations were accompanied by high scores on the scales "Personal adaptive capacity" and "Asthenic reactions and states".

Thus, the phenomena of psychological maladaptation resulting from engaging in military actions, in the emotional, cognitive and behavioral spheres, were dominated by unproductive and relatively productive coping strategies. They were accompanied by changes at the behavioral and communicative levels, decreasing adaptive capacity of the individual and a tendency to asthenic manifestations.

The results of the analysis of the features of the factor *"Coping strategies with a combat eye trauma with partial loss of vision amidst psychological maladaptation"* corresponded to the characteristics of participants MG2. Presented as part of the results of the diagnostic test of coping strategies by E. Haym's, the characteristics of the strategies showed

the lack of application of productive strategies at the cognitive, behavioral and emotional levels. The methods used were relatively productive, and unproductive dominated at the emotional ones. Unlike CG2, the emotional component was dominant and most likely served as the basis for the formation of cognitive and behavioral coping strategies.

Components of the multi-level personal questionnaire "Adaptability" of MG2 participants, compared with CG2, showed a tendency to deteriorate behavioral regulation and moral normality, as well as a significant improvement in communication potential. Against this background, there was a significant improvement in indicators of personal adaptive capacity, compared with participants in CG2, and a significant deterioration in the level of asthenic reactions and states.

Thus, the presence of combat eye trauma with partial loss of vision amidst psychological maladaptation was accompanied by the development of unproductive and relatively productive coping strategies at the cognitive, emotional and behavioral levels, as well as the deterioration of behavioral regulation and asthenic reactions.

The constituents of the factor *"Coping strategies with manifestations of post-traumatic syndrome due to participation in military activities"* corresponded predominantly to the characteristics of participants in CG1. The characteristics presented by the results of the E.Khima Coping Strategy Diagnostic Test showed that participants did not apply productive strategies at all levels. Compared to participants in CG2 and CG3, there is a significant preference for unproductive ways in emotional strategies. Behavioral coping strategies have identified mostly relatively productive ways amidst a moderate increase in unproductive performance. Among the cognitive level, when compared to CG2 and CG3, almost equal distribution across all the studied options of coping strategies was established. Probably, the preponderance of unproductive emotional coping strategies has become the basis for the formation of deterioration at the level of behavioral and disorganization of cognitive strategies.

Components of the multi-level personal questionnaire "Adaptability" of CG1 participants compared to CG2 and CG3 showed a tendency to improve behavioral regulation and deterioration of communicative potential. Compared with CG3, there was a significant deterioration of the indicators at all scales. There is no significant difference between CG1 and CG2 at all other scales.

Thus, a significant advantage of unproductive emotional coping strategies in the manifestation of post-traumatic disorder was established. Their use by personality has led to a worsening of behavioral and diffuse disorganization of cognitive coping strategies. According

to the personal questionnaire "Adaptability", this was accompanied by a deterioration of cognitive capacity.

The analysis of the components of the factor *"Coping strategies in combat eye trauma with partial loss of vision amidst the manifestations of post-traumatic syndrome"* corresponded predominantly to the characteristics of participants MG1. They were dominated by unproductive and relatively productive cognitive coping strategies that were significantly higher than participants in CG1 and MG2. Accordingly, they were higher than in CG3. Similar changes were observed in the analysis of emotional coping strategies. Moreover, in comparison with participants of MG2, the advantage of unproductive methods was more expressed. Among the behavioral strategies, MG1 participants were also dominated by unproductive and relatively productive ways. In this case, unproductive coping strategies in their amount compared to MG2 and CG1 were established much more often. This indicates that eye injury significantly worsen the formation of productive coping strategies amidst clinical manifestations of post-traumatic syndrome. These disorders are also much more expressed than with traumatic psychological trauma. It is likely that the manifestations of stress reactions exacerbate the negative effects on the formation of coping strategies.

This demonstrates that eye injury significantly impairs the formation of productive coping strategies amidst clinical manifestations of post-traumatic syndrome. These disorders are also much more expressed than those of trauma amidst psychological maladaptation. It is likely that the manifestations of stress reactions exacerbate the negative effects on the formation of coping strategies.

The analysis of the constituent features of indicators of the multi-level personal questionnaire "Adaptability" of MG1 participants showed significantly higher rates of disruptions at the scales of behavioral regulation and communicative potential than in MG2 and CG1. The level at the personal adaptive capacity scale in MG1 was higher than in MG2. In addition, indicators at the scale of maladaptation disorders in participants of MG1 and MG2 did not differ. It should be noted that, compared to MG1 and CG1, disruptions in eye trauma were less expressed.

Thus, eyes injury with partial loss of vision amidst clinical manifestations of post-traumatic syndrome led to deterioration in the performance of the generated coping strategies. These disorders were also much more expressed than in the case of eye trauma amidst psychological maladaptation. The maladaptation disorders had no differences and dependence on the phenomena of psychological maladaptation or clinical manifestations of post-traumatic syndrome.

Summarizing the study, we can formulate the following **conclusions**.

1. When psychological maladaptation as a result of engaging in military actions takes place, unproductive and relatively productive coping strategies prevail in emotional, cognitive and behavioral spheres. They are accompanied by changes at the behavioral and communicative levels, decreased adaptive capacity of the individual and a tendency to asthenic manifestations.

2. Combat eyes trauma with partial loss of vision amidst psychological maladaptation is accompanied by the development of unproductive and relatively productive coping strategies at the cognitive, emotional and behavioral levels, as well as by the deterioration of behavioral regulation and asthenic reactions.

3. A significant advantage of unproductive emotional coping strategies in the manifestation of post-traumatic syndrome in military actions participants has been established. Their use by personality leads to a worsening of the behavioral and diffuse disorganization of cognitive coping strategies. According to the personal questionnaire "Adaptability", this is accompanied by a deterioration of cognitive capacity.

4. Combat eyes injury with partial loss of vision amidst manifestations of post-traumatic syndrome leads to a deterioration in the expression of the generated coping strategies. These disruptions are much more expressed than in trauma amidst psychological maladaptation. Disadaptation disorders have no meaningful differences and dependence on the phenomena of psychological maladaptation or clinical manifestations of post-traumatic syndrome.

Research prospects. Further research should be aimed at establishing mechanisms of correction of the processes of formation of coping strategies in combat eyes trauma amidst psychological maladaptation or manifestations of post-traumatic syndrome.

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