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The Results of Experimental Testing of the Stress Resistance Development Program of Military Servicemen of Mechanized Units to Actions in Defensive Combat Conditions

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Abstract

The article highlights the experimental testing of the stress resistance development program of servicemen of mechanized units to actions in defensive combat conditions. The statistical significance of the stress resistance indicators of military servicemen after the implementation of the program has been confirmed using the same methods as during the ascertainment stage of the study, using parametric methods (Student's t-test) and nonparametric methods of statistical analysis for dependent and independent samples (Wilcoxon's t-test, Mann-Whitney's U-test). According to the motivational and value component of stress resistance, the systems of value orientations, life goals, paths and means of achieving them became more pronounced for military servicemen. The development of cognitive and intellectual abilities requires longer and systematic exposure. According to the emotional-volitional component of stress resistance, servicemen became less aggressive, tense, irritable, anxious, more reflective and confident. An important factor in the positive changes was the military servicemen's mastery of breathing exercises and progressive muscle relaxation techniques. Within the behavioral component, an increase in responsibility and self-confidence has been recorded, manifested through an internal desire and willingness to provide combat missions in conditions of increased danger. In general, based on the results of the experimental verification of the stress resistance development program of servicemen of mechanized units to actions in defensive combat conditions, a conclusion has been drawn about the selectivity of positive changes in its structural components. On the one hand, statistical significance confirms the acquisition by the training participants of the skills of emotional and volitional self-regulation, positive thinking, self-control, and adaptive behavior. On the other hand, the relative constancy of certain individual characteristics of servicemen of mechanized units demonstrates the limited effectiveness of training in terms of their statistically significant transformation.

Keywords: Military personnel; Serviceman; Combat operations; Defensive combat; Stressors; Stress resistance; Coping strategies; Motivation; Emotions; Intelligence.

Introduction

In the contemporary conditions of the Russian Ukrainian war, the training and activities of a serviceman of a mechanized unit are impossible without improving his mental processes, properties, and qualities. A key role in this is

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played by stress resistance, which we define as an individual property of a serviceman, determined by the ability to resist negative stress factors of combat, determined by the complex of his innate and acquired individual psychological properties and mental processes. It has been established that stress resistance has a multicomponent structure, therefore its development requires a comprehensive and targeted impact, the result of which is not only theoretical justification, but also experimental confirmation of its effectiveness.

Theoretical foundations

An analysis of psychological works has shown that at present there is a sufficient number of studies that systematize and highlight theoretical and practical approaches to building training programs. Among the main works can be distinguished: O.M. Kokun, N.S. Lozinska, O.I. Pishko, T.L. Hrytsevych, O.S. Kapinus, T.M. Matsevko, O.S. Kolesnichenko, Y.V. Matsehora, I.I. Prykhodko, N.V. Yurieva, V.M. Fedorchuk, V.V. Fedorchuk, L.M. Komarnitska [1–6]. Each training is aimed at solving specific tasks, focused on a specific group or its participants.

Methodology

To achieve the goal, we used statistical research methods for dependent and independent samples (Student's T-test, Wilcoxon's T-test, Mann-Whitney's U-test).

Results

We implemented the program to develop stress resistance of servicemen of mechanized units to actions in defensive combat conditions, taking into account to the combat type specifics, the mental processes and properties of servicemen, their formed system of values and motives, and their own combat experience, in compliance with the principles of activity and a research-creative position. The conceptual basis for the implementation of the content component of the stress resistance development program was the works of A. Kyrychenko, S. Pavlushenko, and D. Lysenko, which have shown their effectiveness and applied orientation [7–9].

The implementation of the stress resistance development program took place within the framework of a formative experiment based on mechanized units of the military units of the Land Forces of the Armed Forces of Ukraine. To test its effectiveness, a control (n = 30 people) and experimental (n = 30 people) group was formed from among military servicemen who showed average and low indicators of the formation of structural components of stress resistance.

The formation of the control (hereinafter referred to as the CG) and experimental (hereinafter referred to as the EG) groups was carried out by equally selecting participants using the pairwise selection method, which made it possible to obtain the most approximate indicators of stress resistance [10, p. 39]. Given the compliance of the empirical data with the law of normal distribution, the effectiveness of the stress resistance development program was assessed using both parametric methods (Student's t-test) and nonparametric methods of statistical analysis for dependent and independent samples (Wilcoxon's t-test, Mann-Whitney's U-test). To this end, we put forward two hypotheses: H0 – there are no statistical differences in the indicators of CG and EG; H1 – indicates statistical differences in the indicators of stress resistance of CG and EG.

At the formative stage of the study, based on the results of the implementation of the stress resistance development program, positive dynamics in indicators between the CG and the EG were confirmed in percentage terms by components: motivational and value (+14%); cognitive and intellectual (+15%); emotional and volitional (+18%); behavioral (+21%). The experimental verification consisted of a thorough statistical analysis for identifysng quantitative changes that occurred between the CG and the EG in servicemen of mechanized units and confirm their statistical significance for each of the structural components of stress resistance. Let's consider each of these methods. The results obtained using T. Ehlers's "Diagnostics of Motivation for Success" method showed an increase in the number of people with "average" and "high" levels of motivation for success by 7% and 3%, respectively. This increase in motivation indicators occurred due to a decrease in the number of servicemen with "low" and "moderately high" levels of motivation. To confirm statistically significant changes in the indicators of motivation to succeed in the CG and EG, we conducted a comparative analysis using the student's t-test for independent samples (Table 1).

The result of the statistical analysis, highlighted in Table 1, showed that the difference between the indicators of the CG

Table 1: Статистичні показники мотивації до успіху за результатами впровадження програми розвитку стресостійкості в КГ та ЕГ

Indicator	Average indicators after the experiment				Student's T-test	
	CG		EG		CG	CG & EG
	M	SD	M	SD	t_{emp}	t_{emp}
Motivation for success	16,13	3,30	17,63	2,02	6,292**	2,118*

*$p \geq 0,05$; **$p \geq 0,01$

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and EG according to the student's t-test is t_{emp} = 2,118 with the normative indicator for this sample t_{cr} = 2,045, p = 0,05.

The indicator in the EG is also statistically different from 0 and is t_{emp} = 6,292. Therefore, according to the results of the test, we have accepted the hypothesis H_1, which indicates the presence of statistical differences in the indicators between the CG and the EG after providing the formative experiment.

Positive changes were found in military personnel of the EG and according to *the method of K. Zamfir in the modification of A. Rean "Motivation of professional activity"*. In particular, there is an increase in the indicators of the "optimal motivational complex" in the EG (+20%) due to a decrease in the indicators of the "non-optimal" (–3%) and "intermediate" (–17%) motivational complexes. A slight positive trend was also detected in the CG for the "optimal" motivational complex (+10%), however, such changes may be due to the specifics of military service and the socio-psychological climate in the military environment. An increase in the indicators of the "optimal motivational complex" indicates an increase in the social significance for military personnel of the very content of military professional activity, satisfaction from the process and results of activity. The main part of changes in motivation indicators occurred not only at the expense of individuals who participated in combat operations (9 servicemen), but also those who did not take direct part (13 servicemen). Such results are not accidental, do not depend on the presence of combat experience, but are due to targeted psychological work with military servicemen on their awareness of personal and social values, motives, and ideas, taking into account individual psychological characteristics, life and professional experience. Accordingly, the decrease in the indicators of the "suboptimal motivational complex" is a reflection of transformational changes in the structure of motivation due to the increased significance of internal motives.

The effectiveness of the applied forms and methods in enhancing professional motivation has confirmed in Table 2.

Table 2 shows that statistically significant differences were found between the CG and the EG in terms of "intrinsic motivation" indicators (t_{emp} = 2.118), with t_{cr} = 2,045, $p \geq$ 0,05. The difference in EG indicators is also statistically different from 0 and is in the indicators of "internal motivation" (t_{emp} = 3.898) and "external positive motivation" (t_{emp} = 2.391). Therefore, the results of the analysis give us reason to accept hypothesis H_1, which confirms the effectiveness of the implementation of the stress resistance development program for military servicemen in the context of professional motivation. No statistically significant differences were found between the CG and the EG by indicators of "extrinsic negative motivation" and "extrinsic positive motivation", so we accepted the hypothesis H_0, which indicates the absence of statistically significant differences between the CG and the EG in terms of this type of motivation.

According to the method of *V. Osodlo "Research of professional motivation"*, positive changes were found in the studied military servicemen of the EG on all scales of professional motivation. In the CG, no significant changes in indicators were recorded after the data were re-cut. Instead, an increase in the number of EG servicemen with high indicators of professional motivation was found on the following scales: "evaluation of actions results" (+7%); "professional aspirations" (+10%); "internality in the field of professional achievements" (+20%); "professional interests and values" (+10%); "life goals" (+7%); "social desirability" (+17%); "general activity" (+20%). The positive dynamics are a reflection of the effectiveness of the applied training techniques and exercises. The coincidence or consequence of the implementation of the stress resistance development program in the CG and EG is reflected in Table 3.

The results of the analysis, highlighted in Table 3, showed the statistical significance of almost all indicators of professional motivation between the CG and the EG: "professional aspirations" (t_{emp} = 2.211, p ≥ 0.05), "internality in the field of professional achievements" (t_{emp} = 2.124, p ≥ 0.05), "life goals" (t_{emp} = 2.135, p ≥ 0.05), "social desirability"

Table 2: Statistical indicators of professional motivation based on the results of implementing the stress resistance development program in the CG and EG

Indicator	Average indicators after the experiment				Student's t-test	
	CG		EG		EG	CG & EG
	M	SD	M	SD	t_{emp}	t_{emp}
Internal motivation	3,02	1,07	3,60	1,06	3,898**	2,118*
External positive motivation	2,87	0,95	2,80	0,79	2,391*	–0,329
External negative motivation	3,00	1,42	2,93	1,08	–1,795	–0,204

*$p \geq 0,05$, **$p \geq 0,01$

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Table 3: Statistical indicators of professional motivation based on the results of implementing the stress resistance development program in the CG and EG

Indicator	Average indicators after the experiment				Student's t-test	
	CG		EG		EG	CG & EG
	M	SD	M	SD	t_{emp}	t_{emp}
Evaluation of actions results	8,26	1,52	9,16	3,07	3,319**	1,435
Professional aspirations	9,80	2,34	11,13	2,33	8,394**	2,211*
Internality in the field of professional achievements	9,73	1,94	10,93	2,40	9,520**	2,124*
Professional interests and values	8,23	1,83	9,60	2,63	6,595**	2,399*
Life goals	8,63	1,51	9,56	1,85	7,712**	2,135*
Social desirability	5,20	1,24	6,06	1,65	6,279**	2,289*
General activity	41,80	3,38	47,36	5,24	9,765**	4,267**

*$p \geq 0,05$, **$p \geq 0,01$

(t_{emp} = 2.289, $p \geq 0.05$), "general activity" (t_{emp} = 4.885, $p \geq 0.01$). Such results indicate an increase in the level of perseverance, responsibility, confidence, and desire to achieve the goal of professional activity. The positive statistical shift in data occurred as a result of the transformation of the motivational and value sphere of military servicemen. Therefore, based on the results of the formative stage of the study, servicemen were able to more clearly outline their life plans, paths, methods and resources for achieving them. Despite the positive trend, the results on the "evaluation of actions results" scale (t_{emp} = 1.435), with t_{cr} = 2.045, $p \geq 0.05$, do not represent a statistically significant difference between the CG and the EG. This means that the "motivational potential of labor" is equivalent for the groups of subjects and depends on management decisions, the system of incentives, rewards, and the organizational culture of the military environment. That is why the relative stability of this scale is less sensitive to the short-term impact of the psychological exercises and techniques of the program we developed.

According to the results of the comparative analysis in the EG before and after the experiment, the indicators of professional motivation differ from 0 with statistical significance at the $p \geq 0.01$ level (see Table 3). In this case, we accepted hypothesis H1, which confirms the effectiveness of the stress resistance development program [10, pp. 84–89].

Thus, the results of the empirical analysis have showed that the motivational structure of the participants in the experiment underwent a positive transformation: the system of value orientations, life goals, paths and means of achieving them became more pronounced, activity, self-knowledge and self-realization in the context of defensive combat tasks increased. The servicemen realized that effectiveness in defensive combat primarily depends on their own efforts, abilities, initiative, perseverance, and constant work on themselves.

We assessed changes in the cognitive and intellectual sphere of military servicemen using R. Cattell's methodology based on three key factors: factor B "intelligence", factor M "practicality – developed imagination", factor Q_1 "conservatism – radicalism". After the formative stage of the experiment, there is an increase in the number of servicemen with high indicators for factors B "intelligence" (+3%), M "practicality – developed imagination" (+7%), Q_1 "conservatism – radicalism" (+7%), evenly with a decrease in the number of servicemen with low indicators.

Analysis of differences using Student's t-test also showed significant differences from 0 in the EG for factor M "practicality – developed imagination" (t_{emp} = 2.212) and factor Q_1 "conservatism – radicalism" (t_{emp} = 2.626) (Table 4). A slight positive dynamics after the formative influence of the program is observed between the CG and the EG for factor B "intelligence" (t_{emp} = 0.505), factor M "practicality – developed imagination" (t_{emp} = 1.749), factor Q_1 "conservatism – radicalism" (t_{emp} = 1.710). Given the lack of statistically confirmed positive changes between the CG and EG indicators for these factors, the hypothesis H_0 was accepted, which reflects the limited impact of the stress resistance development program (see Table 4).

Based on the empirical data presented in Table 4, several conclusions can be drawn. First, the presence of positive changes without statistically significant evidence shows that the development of cognitive and intellectual abilities requires a longer learning process. Secondly, attention should be paid to the individual characteristics of military servicemen. As R. Cattell notes, innate abilities, such as the ability to think, abstract, and reason, reach their greatest development by about 20 years of age [11, p. 120]. Third, the limited ability to acquire quality knowledge, which is foundational for mental development [12, p. 32]. This is the basis for arguing that the development of intellectual characteristics of military servicemen, whose average age is 45 years, is extremely difficult.

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Table 4: Statistical indicators of cognitive and intellectual abilities according to the results of the implementation of the stress resistance development program in the CG and EG

Indicator	Average indicators after the experiment				Student's t-test	
	CG		EG		EG	CG & EG
	M	SD	M	SD	t_{emp}	t_{emp}
Intelligence	2,83	2,15	3,10	1,93	1,409	0,505
Practicality– developed imagination	5,10	1,62	5,83	1,62	2,212*	1,749
Conservatism– radicalism	3,46	1,73	4,23	1,73	2,626*	1,710

*$p \geq 0,05$

Unlike the cognitive-intellectual component, the indicators of the emotional-volitional component of stress resistance show more pronounced positive dynamics after the implementation of the stress resistance development program. Thus, according to the method of *A. Zverkov and E. Eidman "Research on Volitional Self-Regulation"*, the overall level of volitional self-regulation in the EG increased in 23% of servicemen. However, the CG indicators remained virtually unchanged after the re-survey. An in-depth analysis of the indicators of volitional self-regulation showed an increase in high indicators on the scales of "perseverance" (+3%) and "self-control" (23%), which occurred in proportion to the decrease in the number of servicemen with low indicators. This vector of changes in the results of volitional self-regulation is due to the activation of internal resources, emotional control, balance, and responsibility, which ensure the relative stable behavior of military servicemen in a combat situation. Statistical comparison of CG and EG indicators after the formative influence of the stress resistance development program was carried out using Student's t-test (Table 5).

The results presented in Table 5 reflect a significant difference in the indicators of volitional self-regulation from 0 in the EG on the scales "perseverance" ($t_{emp} = 7.133$), "self-control" ($t_{emp} = 5.706$) and the general scale ($t_{emp} = 7.836$) with a normative indicator for this sample $t_{cr} = 2.756$, $p \geq 0.01$. After re-slicing the data, the following difference was obtained in the indicators of volitional self-regulation between the CG and the EG: the "perseverance" scale ($t_{emp} = 2.103$), the "self-control" scale ($t_{emp} = 2.188$), the total scale ($t_{emp} = 2.300$) with the normative indicator for this sample $t_{cr} = 2.045$, $p \geq 0.05$ (see Table 5). Considering that the results obtained are higher than the established normative indicators, we have accepted hypothesis H_1, which confirms the effectiveness of the stress resistance development program based on emotional-volitional self-regulation. These results indicate that the stress resistance development program had a positive impact on the emotional stability of military servicemen, self-confidence, flexibility of their behavior, and the ability to control their actions.

According to the method of *A. Wessman and D. Rix "Emotional State Research"*, the integral indicator of the emotional state of military servicemen of the EG increased by 30% due to a decrease in the number of people with "bad" (–13%) and "deteriorated" (–17%) indicators of the emotional state. Significant positive changes in emotional state were found in the EG and on the scales "calmness – anxiety", "self-confidence – helplessness" (+13%) and "energy – exhaustion", "inspiration – depression" (+10% each). A more thorough analysis revealed that an improvement in the emotional state occurred in 71% of servicemen who participated in combat operations. It can be assumed that such a positive trend is the result of the effective impact of psychocorrectional measures, which contributed to the weakening of the negative impact of the traumatic experience of combat operations, reducing the level of anxiety, physical and psychological exhaustion. In

Table 5: Statistical indicators of volitional self-regulation based on the results of implementing the stress resistance development program in the CG and EG

Indicator	Average indicators after the experiment				Student's t-test	
	CG		EG		EG	CG & EG
	M	SD	M	SD	t_{emp}	t_{emp}
Perseverance	7,36	2,64	8,83	2,75	7,133**	2,103*
Self-control	6,30	2,05	7,50	2,19	5,706**	2,188*
General scale	13,66	4,37	16,33	4,60	7,836**	2,300*

*$p \geq 0,05$, **$p \geq 0,01$

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Table 6: Statistical indicators of emotional state based on the results of implementing the stress resistance development program in the CG and EG

Indicator	Average indicators after the experiment				Student's t-test	
	CG		EG		EG	CG & EG
	M	SD	M	SD	t_{emp}	t_{emp}
Calmness– anxiety	4,86	1,22	5,70	1,70	5,635**	2,175*
Energy–exhaustion	4,33	1,37	5,26	1,70	5,385**	2,339*
Inspiration – depression	4,40	1,47	5,30	1,64	5,214**	2,232*
Self-confidence – helplessness	5,03	1,47	6,00	1,61	5,037**	2,419*
Integral indicator of emotional state	4,80	1,06	5,73	1,17	7,918**	3,229**

turn, the results of the statistical comparison between the CG and the EG confirmed an increase in the level of emotional stability, activity and self-confidence, the subjects became more reflective (Table 6).

As can be seen from the data presented in Table 6, a positive shift in the emotional state between the CG and the EG occurred on the scales "calmness – anxiety" (t_{emp} = 2.175), "energy – exhaustion" (t_{emp} = 2.339), "inspiration – depression" (t_{emp} = 2.232) and "self-confidence – helplessness" (t_{emp} = 2.419), which are statistically significant indicators, with a normative indicator t_{cr} = 2.045, p ≥ 0.05 [10, pp. 84–89]. In the dynamics of the integral indicator, positive shifts were recorded (t_{emp} = 3.229), which are statistically significant changes at t_{cr} = 2.756, p ≥ 0.01. In the EG, according to the results of the program implementation, a significant difference from 0 was also recorded in the indicators of the emotional state.

Within the emotional-volitional component of stress resistance, it was possible to reduce the average indicators of situational anxiety in 13% of EG servicemen, which confirms the quantitative indicators of the experiment participants, obtained using the *Spielberg – Khanin method "Assessment of Situational Anxiety"*. A detailed analysis of empirical data showed that a change in the level of situational anxiety occurred in different categories of military personnel, 83% of servicemen who participated in combat operations. The decrease in anxiety levels is the result of the targeted impact of developmental exercises on the stress resistance of military servicemen. Such dynamics confirm that situational anxiety can be corrected in all age categories of military servicemen with and without experience in defensive combat operations. This is confirmed by the statistical results of the analysis of situational anxiety indicators in the CG and EG, which are interpreted in Table 7.

The results presented in Table 7 show that in the EG after the formative stage, the situational anxiety index according to the Student's t-test is significantly different from 0 and is (t_{emp} = –4.678), which is a statistically significant result for this sample with a normative index t_{cr} = 2.756, p ≥ 0.01. Comparative analysis of situational anxiety between the CG and EG based on the results of implementing the stress resistance development program also showed a statistically significant difference in the data (t_{emp} = –2.260), with t_{cr} = 2.045, p ≥ 0.05. Such indicators give reasons to accept hypothesis H_1, which confirms the effectiveness of the stress resistance development program, as the level of anxiety decreased to a level of statistical significance for such a sample size.

Table 7: Statistical indicators of situational anxiety based on the results of implementing the stress resistance development program in the CG and EG

Indicator	Average indicators after the experiment				Student's t-test	
	CG		EG		EG	CG & EG
	M	SD	M	SD	t_{emp}	t_{emp}
Situational anxiety	30,93	7,62	27,10	5,31	–4,678**	–2,260*

**p ≥ 0,05, **p ≥ 0,01*

Thus, the results of statistical analysis of the emotional-volitional component of stress resistance show that servicemen managed to master not only the skills of managing their own psycho-emotional state, but also to develop the ability for emotional introspection, identification, explanation and understanding of the circumstances that caused them. In addition, the soldiers have learned breathing exercises and progressive muscle relaxation techniques. As a result, the participants in the experiment have become less aggressive, tense, irritable, anxious, and more reflective and confident.

The effectiveness of the training stress resistance development program of servicemen of mechanized units to actions in defensive combat conditions in the context of the behavioral component has been revealed through coping behavior in stressful situations, neuropsychiatric stability and psychophysiological state of the studied servicemen. Thus, the result of implementing a program using exercises aimed at

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changing behavior was a reorientation of servicemen towards a tendency to choose constructive coping strategies due to a decrease in the frequency of choosing maladaptive forms of behavior. This fact is confirmed by a comparative analysis of coping indicators in the CG and EG after a formative experiment using the *method of S. Norman, D. Endler, D. James, M. Parker "Coping Behavior in Stressful Situations"*. Therefore, after the implementation of the formative experiment, military servicemen have a positive tendency to actively search for ways to solve problems, systematically analyze situations, and constructively plan their actions, which confirms positive changes in the "problem-oriented" behavioral strategy of military servicemen (+10%). If during the first data cut, the indicator of the "problem-oriented" strategy was 46%, then after the second cut, the number of people studied according to this indicator have increased to 56%. This trend is associated with the active use of social resources by military servicemen to overcome difficulties, the development of communication skills and interpersonal interaction, which is confirmed by the increase in the indicators of choosing the strategy "social support seeking" (+3%). These changes occurred due to a decrease in the choice of "emotionally oriented strategy" (–3%), "avoidance strategy" (–7%), and "distraction strategy" (–3%). If before the formative influence, the indicators of the "avoidance strategy" in the experimental group were 7%, then after the experiment, no servicemen inclined to choose this strategy were recorded. In turn, the frequency of choosing the "distraction strategy" before the experiment was 10%, and after the experiment, the number of servicemen inclined to choose this behavioral strategy decreased to 7%. At the same time, there is a decrease in the choice of an "emotionally oriented" behavioral strategy by military personnel from 13% to 10%. A slight increase was also recorded in the choice of "problem-oriented" (+3%) and "emotion-oriented" (+3%) behavioral strategies by military personnel of the CG due to a decrease in the indicators of choosing "avoidance" (–3%) and "distraction" (–3%) strategies. In our opinion, such minor changes are situational and caused by external circumstances.

To confirm the effectiveness of the stress resistance development program, we compared the results of the CG and EG after the formative experiment using the Student's t-test (Table 8).

A comparative analysis of the indicators of military personnel's choice of coping strategies showed statistically significant differences from 0 in the EG for the "problem-oriented" strategy (t_{emp} = 4.918) and the "social support seeking" strategy (t_{emp} = 5.583). The difference in the indicators of CG and EG after the formative stage of the study was found for the "problem-oriented" behavioral strategy (t_{emp} = 2.120) and the "social support seeking" strategy (t_{emp} = 2.603). Hypothesis H_1 is confirmed by the fact that the indicated behavioral strategies have a decisive influence on the stress resistance of military servicemen.

The reorientation of military servicemen's actions towards choosing constructive behavioral strategies fully meets our expectations, as it consists in developing the ability of military servicemen of mechanized units to consciously respond to stressful situations of defensive combat, analyze them, attract external and internal resources, and plan their actions to constructively overcome them. No statistically significant differences in the indicators between the CG and the EG were recorded for the "emotionally oriented" strategy (t_{emp} = –0.553), the "avoidance" strategy (t_{emp} = –1.839) and the "distraction" strategy (temp = –1.741). In accordance with these behavioral strategies, the hypothesis H_0 was chosen.

Positive changes are traced using *V. Rybnikov's method "Assessment of Neuropsychic Stability"*. After the formative impact, 23% of EG servicemen had increased neuropsychic stability (hereinafter referred to as NPS). At the same time, no significant changes in NPS were recorded among the military servicemen of the CG. Experimental verification of the results using this method once again confirmed the effectiveness of the stress resistance development program, which is reflected in the corresponding indicators of changes between the CG and the EG, which are interpreted in Table 9.

Table 8: Statistical indicators of coping strategies based on the results of implementing a stress resistance development program in the CG and EG

Coping strategies behavior	Average indicators after the experiment				Student's t-test	
	CG		EG		EG	CG & EG
	M	SD	M	SD	t_{emp}	t_{emp}
Problem-oriented	2,87	0,53	3,31	0,99	4,918**	2,120*
Emotion-oriented	2,45	0,57	2,37	0,56	0,695	–0,553
Avoidance strategy	2,54	0,61	2,24	0,67	–1,274	–1,839
Distraction strategy	2,48	0,74	2,14	0,77	–1,171	–1,741
Social support seeking	2,69	0,54	3,19	0,89	5,583**	2,603*

*$p \geq 0,05$, **$p \geq 0,01$

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After the formative impact of the stress resistance development program, the NPS level in the EG was (t_{emp} = 6.817), which is significantly different from 0. Positive shifts in NPS at the level of statistical significance are also observed between the CG and the EG (t_{emp} = 2.083). The results obtained provided grounds for accepting hypothesis H_1, which reflects a targeted and complex formative influence on increasing psycho-emotional and physical resilience under conditions of intense exposure to combat stressors, i.e., the ability of servicemen to act in extreme conditions without significant disorders of the nervous system increased [10, pp. 84–89].

Experimental testing of the stress resistance development program using *O. Kokun's method "Scaled self-assessment of psychophysiological state"* showed that the psychophysiological state improved in 20% of the studied military servicemen of the EG. In particular, the increase in the number of servicemen with indicators of "above average" level of psychophysiological state occurred at the expense of a decrease in the number of servicemen with "low" (–10%) and "below average" (–10%) levels of psychophysiological state. At first glance, the dynamics of such results gives grounds to argue about the beneficial effect of training exercises. However, an in-depth experimental verification of each of the psychophysiological state scales using Wilcoxon, Student's t-tests and Mann–Whitney's U-test partially confirmed this hypothesis (Table 10).

As can be seen from Table 10, the indicators of the psychophysiological state scales in the EG after the formative influence of the stress resistance development program differ significantly from 0, which is a statistically significant result for this sample size. A comparative study between the CG and the EG confirmed a statistically significant result on the general indicator of psychophysiological state (t_{emp} = 2.580) and the scales "interest in participating in combat operations" (t_{emp} = 0.144) and "desire to provide combat missions" (t_{emp} = 0.034). Acceptance of hypothesis H_1 indicates an increase in the level of motivational orientation, patriotism, responsibility, and self-confidence among military servicemen, which is manifested through an internal desire and willingness to provide combat missions in conditions of increased danger. On the other hand, the results on the scales

Table 9: Statistical indicators of neuropsychic stability based on the results of implementing the stress resistance development program in the CG and EG

Indicator	Average indicators after the experiment				Student's t-test	
	CG		EG		EG	CG & EG
	M	SD	M	SD	t_{emp}	t_{emp}
Neuropsychic stability	5,33	2,96	7,03	2,95	6,154**	2,083*

**p ≥ 0,05, **p ≥ 0,01*

Table 10: Statistical indicators of psychophysiological state based on the results of implementing the stress resistance development program in the CG and EG

Indicator	Average indicators after the experiment				Evaluation criteria (Student, Wilcoxon, Mann-Whitney)	
	CG		EG		EG	CG & EG
	M	SD	M	SD	t_{emp}	t_{emp}
Well-being	41,23	20,22	42,50	15,72	4,267**	0,271
Activity	37,70	15,48	45,60	17,74	6,069**	0,837
Mood	45,56	21,64	46,73	17,15	5,656**	0,231
Skills to provide service tasks	49,80	16,30	53,10	18,81	6,205**	0,726
Interest in participating in combat operations	38,66	17,48	49,50	24,07	<0,01	0,144**
Desire to provide combat missions	40,03	18,48	53,50	23,76	<0,01	0,034**
Self-confidence	44,70	17,07	52,03	16,22	4,940**	1,705
General indicator of psychophysiological state	42,52	11,26	48,99	12,46	13,820**	2,109*

Notes: 1. Statistical significance level for Student's t-test – *p ≥ 0,05, **p ≥ 0,01;
Statistical significance level for Wilcoxon's t-test – *p≤0,05, **p≤0,01;
Statistical significance level for Mann-Whitney's U-test – *p≤0,05, **p≤0,01.
2. The Wilcoxon's t-test and Mann-Whitney's U-test were applied to the indicators "interest in participating in combat operations" and "desire to provide combat missions."

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"well-being" (t_{emp} = 0.271), "activity" (t_{emp} = 0.837), "mood" (t_{emp} = 0.231), "skills to provide service tasks" (t_{emp} = 0.726) and "self-confidence" (t_{emp} = 1.705) gave us grounds to accept the hypothesis H_0, which states that there is no statistically significant difference between the scores of the CG and EG. Attention was drawn to the fact that the vast majority of the servicemen studied, among whom there were no statistical changes, were newly arrived ones. The relative stability of psychophysiological state indicators in this category of servicemen indicates the limited capabilities of the stress resistance development program. It is possible that the basic level of psychophysiological state is the norm for these servicemen and did not require significant adjustment.

Conclusions

Experimental testing of the stress resistance development program of servicemen of mechanized units to actions in defensive combat conditions showed the selectivity of positive changes in its structural components. On the one hand, statistical significance confirms the acquisition by the training participants of the skills of emotional and volitional self-regulation, positive thinking, self-control, and adaptive behavior. On the other hand, the relative constancy of certain individual personality characteristics of servicemen of mechanized units demonstrates the limited effectiveness of the stress resistance development program in terms of their statistically significant transformation.

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