

Effect of running classes on the stress level of combatants

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Abstract

The full-scale war in Ukraine is having a significant psychological and physical impact on combatants. One of the negative consequences of war is combat stress, accompanied by the action of stress factors that negatively affect psychological and physical health, reducing the process of socialization to peaceful life. At the same time, there are not enough studies covering the solution of these issues with the help of adaptive physical culture (APC), which confirms the relevance of the chosen topic.

Purpose: to determine the impact of running classes on combatants who have the consequences of combat stress.

Material & Methods: the research was carried out on the basis of the National Council for Sports Rehabilitation of Defenders of Ukraine in Kyiv. It was attended by 40 combatants. The following methods were used in the course of the study: theoretical analysis and generalization of scientific and methodological literature, pedagogical testing, pedagogical experiment, methods of mathematical statistics.

Results: at the end of the pedagogical experiment, the participants in the hostilities determined the level of stress according to the "Modified method for determining the level of stress by L. Ryder", before and after running classes. Based on the data after the study, it was found that at the initial stage, 77% of combatants had a high level of stress, and 13% had an average level of stress. At stage 2, after the use of APC (within 1 year), the level of stress among combatants was reduced to 50% – medium, 50% – low, which shows the effectiveness of the use of APC (running classes).

Conclusions: a study was conducted with the determination of the level of stress according to the "Modified method of the level of stress according to L. Rieder" and the positive effect of running was shown. Measures are proposed to help reduce the level of stress among combatants.

The dynamics of the results indicates the stability of reducing the level of combat stress with the help of running, which confirms the expediency of organizing the training process for combatants.

Анотація

Наталія Крушинська, Ірина Когут, Сергій Матвеев, Марина Ягієлло. Вплив занять бігом на рівень стресу в учасників бойових дій. Повномасштабна війна в Україні чинить значний психологічний та фізичний вплив на учасників бойових дій (УБД). Одним із негативних наслідків війни є бойовий стрес, який супроводжується дією стрес-факторів, що негативно впливають на психологічне та фізичне здоров'я, яке в подальшому знижує процес соціалізації до мирного життя. Разом з тим, досліджень, що висвітлювали б вирішення цих питань за допомогою адаптивної фізичної культури (АФК) недостатньо, що підтверджує актуальність обраної теми. **Мета:** визначити вплив занять бігом на учасників бойових дій, які мають наслідки бойового стресу. **Матеріал і методи:** дослідження здійснювались на базі Національної ради спортивної реабілітації захисників України в м. Києві. У ньому брали участь 40 учасників бойових дій. Під час проведення дослідження застосовувались наступні методи: теоретичний аналіз і узагальнення наукової та методичної літератури, педагогічне тестування, педагогічний експеримент, методи математичної статистики. **Результати:** по завершенню педагогічного експерименту, в учасників бойових дій визначено рівень стресу за «Модифікованою методикою на визначення рівня стресу Л. Рідера», до занять бігом та після. Виходячи з даних після дослідження встановлено, що на початковому етапі у 77% УБД був високий рівень стресу, а в 13% середній рівень стресу. На 2 етапі після використання АФК (впродовж 1 року) було знижено рівень стресу в УБД до 50% – середній, 50% – низького, що показує про ефективність

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використання АФК (заняття бігом). **Висновки:** проведено дослідження з визначенням рівню стресу за «Модифікованою методикою рівня стресу за Л. Рідера» та показаний позитивний вплив занять бігом. Запропоновані заходи, що сприятимуть зниженню рівня стресу в УБД. Динаміка результатів свідчить про стабільність зниження рівня бойового стресу за допомогою бігу, що підтверджує доцільність організації тренувального процесу для УБД.

Introduction

The full-scale war in Ukraine has a significant psychological and physical impact on the combatants. One of the negative consequences of war is combat stress, accompanied by the action of stress factors that negatively affect psychological and physical health, which further reduces the process of socialization to peaceful life.

According to scientific studies by Druz O. et al. (2016) and Blinov O. (2022), about 80% of combatants were under combat stress, which later transformed into post-traumatic stress disorder (PTSD) of varying severity. 98% of combatants need qualified assistance as a result of combat stress.

An analysis of the literary sources of scientists Blaut O. (2021), Bryndikov Yu. (2018), covering the problem of the recovery of combatants after combat stress, shows that military doctors have traditionally dealt with this problem, among which psychiatrists play a leading role. At the same time, the effectiveness of sports rehabilitation as a means of restoring combatants after combat stress is insufficiently covered in scientific sources.

On May 12, 2018, the President of Ukraine signed a Decree on supporting the development of sports rehabilitation for combatants. According to this document, combatants are involved in sports competitions, training and physical education and sports rehabilitation in order to preserve the social capital of the country.

On February 12, 2022, the Verkhovna Rada of Ukraine adopted the Law of Ukraine "On Amendments to the Law of Ukraine "On Physical Culture and Sports" on the sport of war veterans" (No. 5526). According to this law, according to the proposals of the Ministers of Veterans, a separate area of sport is legally fixed at the state level – the sport of war veterans. The structure of veteran sports organizations will expand, and sports competitions among defenders will be held at the district, regional and international levels.

The sport of war veterans is one of the components of the adaptation of veterans in society and civilian life. Sports competitions for combatants are not only a tool for rehabilitation, but also an opportunity to build high-quality communication among the Defenders, expand the circle of participants in the implementation of veteran policy in communities and reduce combat stress.

The reduction of combat stress with the help of APC and involvement in sports was revealed by scientists Bryndikov Yu., Puzan Ya., Prykhodko I. At the same time, the number of scientific works and events covering recovery from combat stress with the help of sports (including running) is not enough, which confirms the relevance of the chosen topic.

Material and Methods of the research

Members

The study involved combatants in the amount of 40 people who during the year were engaged in APC and preparation

for all-Ukrainian and international competitions. The combatants were informed about all the features of the study and agreed to participate.

Methods

Among the research methods, we used the analysis and generalization of special scientific and methodological literature, documentary sources and materials from the Internet; pedagogical supervision; questioning; Methods of Mathematical Statistics The research program included "Modified Method for Determining the Level of Stress by L. Ryder".

Procedure (organization of the study)

The pedagogical experiment was carried out on the basis of the National Council for Sports Rehabilitation of Defenders of Ukraine. The study involved 40 combatants who were tested. Testing was carried out by the coach at the first training session and a year after APC (running) in preparation for international and all-Ukrainian competitions. Athletes who qualified for the international competitions Invictus Games, Warriors games, and the Marine Corps marathon in the United States took part in the research. All participants were informed about the use of testing materials and gave their consent to their use.

The research program included testing "Modified method for determining the level of stress by L. Reeder" – this is an express diagnostic of the level of stress, which has been used since 1969 and demonstrates the effective determination of indicators of self-assessment of health, stress level and life satisfaction in patients. Thus, combatants can conduct a self-assessment by checking the appropriate box in the questionnaire. "The modified method for determining the level of stress by L. Reeder" is part of the primary study with which you can identify the level of stress at the moment in combatants. The results are interpreted using the assessment criteria of the questionnaire, distributed by scores from 1 to 4. 1) 1–2 – high; 2) 2,01–3 – medium; 3) 3,01–4 – low.

Statistical analysis

In order to process scientific materials, methods of mathematical statistics were used for quantitative analysis of the results obtained. The research results were processed using Excel 2016 (Microsoft, USA).

Results of the research

Analyzing the literary sources of scientists O. Blinova (2022), O. Druz et al. (2016), O. Kravchenko (2022), we can conclude that the level of combat stress is present in 98% of combatants. In order to preserve the social capital of the country among combatants with combat stress, the need to find effective means of restoring these individuals is becoming more active. According to scientists Zlivkov V. and others (2022), Shidelko A. (2022), one of the areas for the recovery of combatants is the use of APC, in particular, preparation for sports competitions in running.

To determine the level of stress among combatants, studies were carried out according to the method of L. Ryder. Testing was carried out in two stages (before the start of APC training and after 1 year of running) (Table 1).

An analysis of the results obtained indicates a high level of stress found in 77% of combatants. The average level of stress is 23% of combatants. A low level of stress was not found during the first stage of the survey of combatants, which indicates the negative consequences of combat stress and the need to restore psychological and physical health with the help of APC, in particular, running (Shidelko, A. (2022)).

Table 1

Level of stress among combatants according to the modified method of L. Ryder (n=40)

Last name, First name	Age	I stage			II stage		
		Total score	Result	Stress level	Total score	Result	Stress level
B. O.	22	12	1,71	high	23	3,28	low
S. G.	25	11	1,57	high	18	2,57	average
K. V.	30	16	2,28	average	23	3,28	low
Ch. P.	32	15	2,14	average	21	3	low
B. M.	32	15	2,14	average	24	3,42	low
S. A.	32	13	1,85	high	19	2,71	average
T. O.	32	11	1,57	high	21	3	low
M. M.	35	13	1,85	high	22	3,14	low
P.P.	35	12	1,71	high	21	3	low
K.V.	36	16	2,28	average	24	3,42	low
Z. O.	36	12	1,71	high	22	3,14	low
K.S.	37	15	2,14	average	21	3	low
N. I.	38	16	2,28	average	21	3	low
P.R.	39	10	1,42	high	20	2,85	average
B. R.	40	14	2	high	17	2,42	average
K. I.	41	11	1,57	high	20	2,85	average
K. T.	41	14	2	high	22	3,14	low
M. M.	42	12	1,71	high	17	2,42	average
G. I.	42	12	1,71	high	25	3,57	low
G. O.	42	9	1,28	high	16	2,28	average
D.V.	42	15	2,14	average	23	3,28	low
Sh. A.	42	13	1,85	high	19	2,71	average
B. Yu.	43	15	2,14	average	23	3,28	low
S. Yu.	43	10	1,42	high	19	2,71	average
K. G.	44	12	1,71	high	17	2,42	average
D.S.	44	13	1,85	high	22	3,14	low
Z. I.	44	13	1,85	high	19	2,71	average
O.V.	45	13	1,85	high	21	3	low
Z. Yu.	47	16	2,28	average	24	3,42	low
D.V.	47	12	1,71	high	17	2,42	average
Sh. V.	49	10	1,42	high	19	2,71	average
R. V.	51	13	1,85	high	24	3,42	low
H.S.	53	12	1,71	high	18	2,57	average
Sh. L.	54	14	2	high	19	2,71	average
B. V.	54	11	1,57	high	18	2,57	average
P.V.	54	14	2	high	22	3,14	low
T.S.	56	13	1,85	high	18	2,57	average
P.V.	56	14	2	high	20	2,85	average
Yu. V.	57	12	1,71	high	19	2,71	average
V. A.	60	9	1,28	high	17	2,42	average

Considering the age indicator, we can generalize those combatants aged 45-60 have a harder time recovering from combat stress (Melnyk, O., 2019). Recovery also depends

on the responsible attitude to the training process of combatants. Athletes who did not systematically attend training are significantly lower than the effectiveness of restoring physical

and psychological health (Krushinskaya N. and others (2021), Matveev S. and others (2022)).

For 1 year, the combatants were engaged in running, preparing for all-Ukrainian and international competitions: Invictus Games, Marathon in New York, which no one wants to run, the run “I respect the soldiers, I run for the Heroes of Ukraine”, “Veteran Ten”, “Military Run UA”, “Veteran Mile in Kosice”, Marine Corps Marathon in the USA, Peace Marathon in Kosice and others (Puzan Ya. and others (2021), Ukrinform. (2021), Presidential Decree (2018), Internet source, 2021). The trainings took place three times a week under the supervision of a trainer, and twice a week the combatants trained individually. To control the physical fitness of the participants in the hostilities, the test developed by the Ministry of Youth and Sports of Ukraine was used – “Annual assessment of the physical fitness of the population” (Decree of the President of Ukraine No. 123/2018 (2018). And to control the decrease or increase in combat stress and manifestations of PTSD, the “Modified method for determining the level of stress by L. Ryder” was used.

After the second stage of the questionnaire on the “Modified methodology for determining the level of stress”, it was found that 50% of combatants have an average level of stress, and 50% have a low level of stress, showing a positive effect of running on recovery from combat stress (Figure 1).

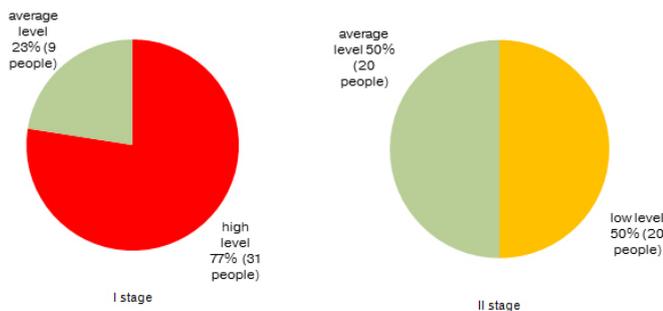


Figure 1. Modified method for determining the level of stress by L. Ryder

So, based on the data obtained after passing the “Modified Method for Determining the Level of Stress by L. Ryder” among combatants, it was found that at the initial stage, out of 40 respondents, 31 respondents had a high level of stress (77%); 9 respondents had an average level of stress (23%), which indicates the negative effects of combat stress. After completing the APC (running) classes, the testing was repeated, which showed the following indicators: in 20 respondents, the level of stress decreased to average (50%), and in 20 to low (50%), which showed the effectiveness of building the training process.

Discussion

The large-scale war in Ukraine led to the negative consequences of combat stress and manifestations of PTSD among

combatants. To reduce and eliminate combat stress, the use of APC (in particular, running classes) is proposed.

The results of the study according to the “Modified method for determining the level of stress by L. Ryder” indicate a positive effect of APC training. In the works of domestic authors (Yu. Bryndikov, 2018; I. Kogut, N. Krushinskaya, S. Matveev, 2021), positive factors of the influence of APC classes on the psychological and physical condition of combatants are noted. Using the L. Rieder test, the presence of negative psychological consequences of the war among combatants and the positive effect of physical activity on improving their psychological and physical health were confirmed (Decree of the President of Ukraine No. 123/2018 (2018); Internet source (2019, October 27; 2022, August 10; 2022, February 15).

Therefore, it can be assumed that subsequent regular APC classes will reduce the negative level of stress among combatants. The readiness of combatants for systematic APC classes will reduce the level of combat stress and manifestations of PTSD (Kogut I. and others 2021; Prykhodko I., 2021; Internet source (2021, August 1).

Conclusions

1. An analysis of professional literature shows that 98% of combatants have combat stress, which further negatively affects adaptation to civilian life. Through adaptive physical training, combatants can reduce the level of negative effects of combat stress.

2. Combatants aged 45–60 more difficult to recover from combat stress. At the same time, recovery depends on a responsible attitude to the training process of combatants. Athletes who did not systematically attend training are significantly lower than the effectiveness of restoring physical and psychological health.

3. The results of the studies made it possible to determine that running classes have a positive effect on the level of stress among combatants. At the initial stage, 77% of combatants had a high level of stress, and 13% had an average level of stress. After studies using APC, including running (for 1 year), the level of stress among combatants was reduced to 50% – medium, 50% – low, which indicates the effectiveness of the use of APC funds.

Author Contributions

Nataliia Krushynska – research planning, manuscript preparation;

Iryna Kohut – data interpretation, data analysis;

Sergey Matveev – data collection, literature analysis;

Marina Jagiello – Study design/planning.

Conflicts of Interest

The authors declare no conflict of interest.

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