



## STRATEGIES OF OVERCOMING STRESS AMONG QUALIFIED SPORTSMEN-ROWERS

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### Abstract

Stress resistance is one of the main criteria of a sportsman's physical and mental health. A person's ability to cope with stress decreases the impact of stress on frequency of injuries. In this regard, an important part of psychological preparation of a sportsman is development of their abilities to cope with stress, and to effectively use the strategies to cope with stress (coping strategies).

*Aim is* to determine which exact coping strategies are typical for qualified sportsmen-rowers.

*Methods.* To determine the priority style of coping with stress situations or issues among sportsmen the questionnaire «Defining individual coping strategies» by E. Heim was used.

*Results.* The most widespread coping strategies among the surveyed sportsmen were: in cognitive sphere – «problem analysis»; in emotional sphere – «optimism»; in behavioral sphere – «distraction». In general, among qualified sportsmen-rowers quantitatively dominated using of «adaptive» strategies compared to «nonadaptive» and «relatively adaptive» ones.

*Conclusions.* It was established that among adaptive coping strategies the most widespread among sportsmen are emotional adaptive strategies, among nonadaptive coping strategies – cognitive nonadaptive strategies. Among relatively adaptive coping strategies cognitive and behavioral relatively adaptive strategies prevail.

**Keywords:** coping strategies, sport, rowing, qualified sportsmen.

### Introduction

Stress resistance is one of the main criteria of a sportsman's physical and mental health [2, 7, 13]. A sportsman's ability to cope with stress and social support decrease the impact of stress on frequency of injuries [1, 4, 9]. In this regard, a significantly important part of psychological preparation of a sportsman is development of their abilities to cope with stress, and to develop an ability to effectively use the strategies to cope with stress (coping strategies) [3, 8, 11, 15]. The principle of «adaptability-nonadaptability» of coping strategies is included in the concept of E. Heim methodology [5, 14]. In general, coping strategies adaptability is related to a wide range of positive results including personal assessment of health, social support,

psychosocial adaptedness [8, 12]. Three main types of coping strategies are known: 1) cognitive adaptation strategies, 2) behavioral adaptation strategies, and 3) emotionally-oriented strategies [5, 14].

Psychological significance of coping lies in the fact that it is to adapt a person to situation demands effectively [6]. Using coping strategies is possible not only in case of reaction to stress, coping with stress, but also to prevent stressor act, to prepare for a possible stress situation (proactive coping) [8]. In general, to the most productive strategies of coping with difficulties the following strategies are classified: proactive coping, strategies of active coping with problems, planning of activity, seeking social support, and humor strategies. To ineffective



ones in the long term the strategies of evasion and avoidance of problems are classified [1, 8, 15]. It is worth mentioning that efficiency of coping strategies is not a constant characteristic. Thus, focus on the problem can be less effective tactic in coping with stress than evasion if it is accompanied by emotional interpretation of stress situation [11]. In practical terms, the necessity of investigating the strategies of coping with any life's challenges, and stress is related to importance and necessity of maintaining the gained success in sports activity and psychological well-being of a sportsman [1, 8, 13].

Certainly, it is relevant to investigate stress as a complex of psychological, psychophysiological, and physiological reactions of sportsmen to stress situation [1, 13] including the purpose to predict the risk of sportsmen's traumatism. It is worth highlighting that physical education is observed as one of the main pedagogical technique of developing an ability to effectively use coping strategies [1, 6].

The research was conducted due to fiscal research topic «Technology of assessment of risks of sportsmen's traumatism by electroneuromyographic and psychophysiological indicators» (State register

№ 0119U000307 of Ministry of education and science of Ukraine).

*Research objective* was to determine the types of coping strategies typical for qualified sportsmen-rowers.

### Methods

In the research conducted 43 qualified sportsmen were involved (masters of sports, international masters of sports, and honored masters of sports) aged 14–29 years old: 27 males and 16 females, representatives of the National team of rowing and canoeing of Ukraine. To study strategies of coping with stress (coping strategies), and determine the priority style of coping with stress situations or problems among sportsmen the questionnaire «Defining individual coping strategies» by E. Heim was used [5, 14], which allowed investigating 26 contextually-specific variations of coping divided according to three main spheres of mental activity into cognitive, emotional and behavioral coping mechanisms. Coping behavior types were divided by E. Heim into three main groups by the degree of their adaptive capabilities: «adaptive», «relatively adaptive» and «nonadaptive» (table 1).

Table 1

Coping strategies, E. Heim classification [5]

|                                  | In cognitive sphere  | In emotional sphere  | In behavioral sphere                                   |
|----------------------------------|--|--|--|
| «Adaptive» strategies            | «problem analysis», «one's own value establishment», «preservation of self-restrain» | «protest», «optimism»  | «collaboration», «addressing», «altruism»              |
| «Nonadaptive» strategies         | «obedience», «confusion», «dissimulation», «ignorance»                               | «oppression of emotions», «obedience», «self-accusation», «aggressiveness» | «active evasion», «retreat»                            |
| «Relatively adaptive» strategies | «relativeness», «adding sense», «religiosity»  | «emotional release», «passive cooperation»                                 | «compensation», «distraction», «constructive activity» |

While conducting complex psychological and biological investigations involving sportsmen according to bioethics principles the «Program of complex biological investigation of peculiarities of sportsmen's functional capabilities» established in the SRI NUUPES laboratory of theory and methodology of sports preparation and sportsmen's spare capacities was adhered to; as well the legislation of Ukraine on healthcare

and Helsinki declaration, 2000, and European Community directives 86/609 on participation of people in medical biological investigations were adhered to [10].

Statistical processing of the results was conducted using the «Microsoft Excel» software program determining the main statistic indicators: arithmetic average value (M), mean square deviation (SD), coefficient of variation (CV, %),

minimum and maximum values of a measurement in the sample, median value, etc.

## Results and discussion

One of the objectives of our research was to reveal the types of coping behaviour of qualified sportsmen-rowers. There was conducted a research on strategies of coping with life's challenges among sportsmen to further compare the findings received with presence or absence of injuries in the groups of «adaptive», «relatively adaptive» and «nonadaptive» coping strategies. As it can be seen from the data represented in table 2 the lowest difference while dividing the sportsmen into groups depending on the choice of

coping strategies («adaptive», «nonadaptive» or «relatively adaptive») was revealed for cognitive sphere characterizing a number of abilities and skills obtained by a sportsman. These are a sportsman's ability to set particular goals and plan the stages of reaching them, ability to concentrate on reaching the goal, and flexibility to respond to situation changes. Processing of data received in the course of research using E. Heim methodology has shown the following results: for 37,21 % of the sportsmen the usage of cognitive adaptive strategies was typical which include «problem analysis», «one's own value establishment» and «preservation of self-restraint».

Table 2

Coping strategies of sportsmen rowers according to E. Heim test (n=43)

| Coping strategies                | Number of sportsmen, n, | Number of sportsmen, % |
|----------------------------------|-------------------------|------------------------|
| Cognitive coping strategies      |                         |                        |
| «Adaptive» strategies            | 16                      | 37,21%                 |
| «Nonadaptive» strategies         | 12                      | 27,91%                 |
| «Relatively adaptive» strategies | 15                      | 34,88%                 |
| Emotional coping strategies      |                         |                        |
| «Adaptive» strategies            | 34                      | 79,07%                 |
| «Nonadaptive» strategies         | 8                       | 18,60%                 |
| «Relatively adaptive» strategies | 1                       | 2,33%                  |
| Behavioral coping strategies     |                         |                        |
| «Adaptive» strategies            | 22                      | 51,16%                 |
| «Nonadaptive» strategies         | 5                       | 11,63%                 |
| «Relatively adaptive» strategies | 16                      | 37,21%                 |

Among 34,88 % of the sportsmen «relatively adaptive» cognitive strategies were used including «relativeness», «adding sense», and «religiosity». It is worth mentioning that constructiveness of «relatively adaptive» variants of coping behaviour depends on significance and degree of the situation needed to be coped with. Cognitive «nonadaptive» strategies were revealed among 27,91 % of the sportsmen. «Nonadaptive» variants of coping behaviour among cognitive coping strategies include: «obedience», «confusion», «dissimulation», and «ignorance».

The most distinct differences while choosing coping strategies were revealed for emotional «adaptive» coping strategies. Thus, for 79,07 % of the sportsmen the choice of emotional «adaptive» variants of coping strategies was typical including «protest» and «optimism».

Using «relatively adaptive» emotional strategies was typical for 2,33 % of the sportsmen: «emotional release», and «passive cooperation». Among emotional coping strategies the «nonadaptive» variants of coping behaviour include «oppression of emotions», «obedience», «self-accusation» and «aggressiveness», and their usage appeared to be typical for 18,6 % of the sportsmen (see table 2).

Using behavioral «adaptive» coping strategies was revealed among 51,16 % of the sportsmen. Among behavioral coping strategies we classify under «adaptive» variants of coping behaviour the following: «collaboration», «addressing», and «altruism» where such personal behaviour is understood when they collaborate with significant (more experienced) people, seek support in the closest social surrounding or offers their assistance to the closest people while coping with difficulties.



Using «relatively adaptive» behavioral strategies («compensation», «distraction», «constructive activity») was typical for 37,21 % of the sportsmen (see table 2) whose behaviour was characterized with purpose to temporarily shift away from solving problems.

«Nonadaptive» behavioral strategies were diagnosed among 11,63 % of the sportsmen. Among behavioral coping strategies «nonadaptive» variants of coping behaviour include «active evasion», and «retreat» characterizing behaviour when avoidance of the thoughts about the problems, passiveness, solitude, tranquility, isolation, purpose to step away from active interpersonal contacts, and denial to solve the problems are provided.

Thus, the most widespread coping strategies among the surveyed sportsmen were: in cognitive sphere – «problem analysis»; in emotional sphere – «optimism»; in behavioral sphere – «distraction».

In general, among the sportsmen the usage of «adaptive» strategies compared to «nonadaptive» and «relatively adaptive» quantitatively prevailed. Among «adaptive» coping strategies the most widespread among the sportsmen were emotional «adaptive» strategies. Among «nonadaptive» coping strategies the most widespread among the sportsmen were cognitive «nonadaptive» strategies. Among «relatively adaptive» coping strategies prevailed cognitive and behavioral «relatively adaptive» strategies (see table 1).

### Prospect of further research

It is interesting to further investigate the issue with conducting comparative analysis of psychological and psychophysiological indicators among sportsmen specializing in different kinds of sports, as well as to further analyze the results concerning presence or absence of injuries within the groups with «adaptive», «relatively adaptive» and «nonadaptive» coping strategies taking into account the productivity of competitive activities.

### Conclusions

1. The most widespread coping strategies among qualified sportsmen-rowers were: in cognitive sphere – «problem analysis», in emotional sphere – «optimism»; in behavioral sphere – «distraction».
2. Among qualified sportsmen-rowers the usage of «adaptive» strategies compared to «nonadaptive» and «relatively adaptive» quantitatively prevailed.
3. Among adaptive coping strategies the most widespread among the sportsmen were emotional adaptive strategies, and among nonadaptive coping strategies – cognitive nonadaptive strategies. Among relatively adaptive coping strategies cognitive and behavioral relatively adaptive strategies prevailed.

### References

1. Bochaver KA, Dovzhik LM. Coping behavior in professional sports: phenomenology and diagnosis. The electronic journal «Klinicheskaya i spetsial'naya psikhologiya». 2016; 5, 1: 1-18. DOI: 10.17759/psyclin.2016050101
2. Fedorchuk S, Lysenko E, Shynkaruk O. Constructive and non-constructive coping strategies and psychophysiological properties of elite athletes. *European Psychiatry*. Elsevier, 2019; 56: 306.
3. Fedorchuk S, Tukaiev S, Lysenko O, Shynkaruk O. The psychophysiological state of highly qualified athletes performing in diving with different levels of anxiety. *European Psychiatry*. Elsevier, 2018; 48: 681.
4. Hardy CJ, Richman JM, Rosenfeld LB. The role of social support in the life stress/injury relationship. *Sport Psychol*. 1991; 5, 128: 39.
5. Heim E. Coping based intervention strategies. *Patient education and counseling*. 1995; 26(1-3): 145-151.
6. Pichurin VV. Coping strategies and psychological readiness of students for professional work. *Pedahohika, psykholohiya ta medyko-biolohichni problemy fizychnoho vykhovannya i sportu*. 2015; 2: 53-59.
7. Platonov VN. The system of training athletes in the Olympic sport. *General theory and its practical applications*. Kyiv: Olympic literature; 2015. 680 p.



8. Rasskazova EI, Gordeev TO, Osin EN. Coping strategies in the structure of activity and self-regulation: psychometric characteristics and possibilities of applying the COPE methodology. *Psikhologiya. Zhurnal VSE*. 2013; 1: 82-118.
9. Sarason I.G., Sarason J.H., Pierce G.R. Social support, personality, and performance. *J. Appl. Sport Psychol.* 1990; 2, 117: 27.
10. Shinkaruk OA, Lysenko OM, Gunin LM, Karlenko VP, Zemtsova II, Olishevsky SV. etc. Medico-biological support of training of athletes of national teams of Ukraine on Olympic sports. Kyiv: Olympic literature; 2009. 144 p
11. Suls J, Fletcher B. The relative efficacy of avoidant and nonavoidant coping strategies: A meta-analysis. *Health Psychology*. 1985; 4(3): 249-288.
12. Vaillant GE. Adaptive mental mechanisms. Their role in a positive psychology. *American Psychologist*. 2000; 55, 1: 89-98.
13. Voronova VI. Sport Psychology: textbook for students of higher educational institutions. Kyiv: Olympic literature; 2007. 298 p.
14. Wasserman LI, Ababkov VA, Trifonova EA. Coping with stress. Theory and psychological testing. SPb: Rech; 2010. 192 p.
15. Weinberg RS, Gould D. Sport Psychology. Kyiv: Olympic literature; 2014. 335 p.

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