

Phenomenon of nervous mental stability in extreme sports

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Abstract:

Theoretical and empirical study of the phenomenon of nervous mental stability has been presented in the article; its features have been highlighted from the point of view of various interpretations. The approaches to the interpretation of nervous mental stability (NMS) have been systematized and its structural components have been defined. The psychological side of the NMS and the basic patterns of this property have been considered in the context of the practice of extreme sports. An empirical study of the psychological characteristics of NMS of representatives of extreme sports have been conducted and analyzed. The dynamic of the level of this property has been traced depending on the experience of extreme activities and the type of extreme sports. The characteristics of the NMS, depending on the level of tendency to risk athlete-extreme have been identified. Recommendations to improve the level of nervous mental stability for the successful extreme activities of athletes and people planning to start an extreme career have been developed.

Key words: nervous mental stability, nervous mental instability, stress, stress resistance, adaptation, extremality, extreme activity in sports.

Introduction

In the modern world, which is constantly changing and putting forward all the new requirements for a person, for the preservation of physiological and psychological health a sufficient level of nervous mental stability is extremely important. The highest possible level of formation of this property is required from personality in some activities. Extreme sports are among these activities. There are new kinds of sport that offer a "sharp" feel, often associated with risk and balance between life and death. However, for some people extreme sports become not just a hobby or short-term pleasure, but almost the meaning of life. An athlete-extreme should have some personal qualities for a successful and safe extreme activity, among which the important place occupies a nervous mental stability. We consider this property is responsible for the safety and success of extreme sports, as well as for the impact of this kind of activity on the personality of the athlete. Therefore, we consider it necessary to investigate the features of this phenomenon and trace its dynamics in the process of occupation of extreme sports.

A problem statement. The requirements of modern sports are extremely high. In order to achieve high results and effective implementation of sports activities, not only physical abilities, but also the ability to adapt easily to fast-changing conditions in extreme and uncertain situations. There is a growing need for athletes who are capable of making the best decisions and able to choose the best and most advantageous alternative in extreme situations. In many ways, these properties depend on nervous mental stability and stress resistance. These qualities are not fully elucidated, so this problem is acute and relevant.

Analysis of recent research and publications. The problem of psychological peculiarities of the personality of athletes who are engaged in extreme sports was developed by M. Barlow [13], Yu. V. Baykovskiy [11], L. Hardy [13], I. H. Havrilets [2], C. L. Scanff [13], T. S. Shmigaleva [11], T. Woodman [13], M. Zuckerman [14]; scientific and psychological interpretation of psychological characteristics of extreme activity and sports was carried out by O. P. Karpova [4], M. S. Korolchuk [6], V. M. Krainiuk [6], T. M. Krasnyanskaya [7], V. I. Lebedev [8], A. M. Stolyarenko [12]; the problem of coping with an extreme situation was elaborated by V. A. Bodrov [1], E. P. Ilin [3], N. Kogan [5], V. A. Petrovskiy [9], Yu. V. Scherbatyih [10], M. Wallach [5].

There is not enough theoretical and practical researches in psychological science that allow us to make a fairly complete picture of the peculiarities of nervous mental stability in extreme sports.

The purpose of the article is to study the psychological characteristics of nervous mental stability of athlete-extreme.

Exposition of the main material and substantiation of received results. The word "extreme" confidently entered into the vocabulary of a modern person. Extreme sport now helps a person to relieve stress, or, conversely, to get it. Extreme is an extraordinary actions that are usually associated with danger to life and health. Proceeding from the proposed definition, one can distinguish the main features of the extreme: 1) extreme nature of the phenomenon, that is out of scope of normal life of man, society, state; 2) limitation in

time: everything extreme occurs quickly, does not require a lot of time, suddenly occurs and suddenly ends; 3) irresistible action: witnesses of extreme action cannot withstand it; 4) complexity: extreme event has a high degree of complexity; participant of extreme action feels the influence of the complexity of the event, its "extreme"; 5) presence of negative consequences – both real and potential; the consequences in this case are the result of an extreme action that can be expressed in a negative change of objective reality [6, 7, 9].

Attractiveness to extreme activities is considered by scientists from different points of view. A number of interpretations and opinions are highlighted on this issue in scientific works.

Opinions about capture of extreme sports as healthy and useful have been divided. Some scholars point out the positive influence of these activities on personality, while others categorically regard extreme sports as destructive phenomena, calling the capture of extreme sports as self-destructive or suicidal behavior [7, 12, 13]. In our opinion, this depends directly on the type of extreme sports, the objective level of danger, motives which athlete guides, and, finally, on his nervous mental stability and peculiarities of the manifestation of risk in extreme situations. Except for some cases and certain sportswe adhere to the idea that extreme sports are not a destructive phenomenon and acts as a mechanism of the formation of healthy properties and personality qualities, positively affects the general mental condition of the athlete.

According to the Russian psychologist V. Petrovsky, in extreme circumstances, such aspects of the individual peculiarities of personality can appear, which do not appear in normal situations [9]. It has been established by L. Dick that the personality traits associated with the stress management strategy are activated only under extreme conditions. For example, state of climbers' anxiety and depression that are their characteristic in everyday life disappear when athletes develop states of emotional excitement, joy [8, p. 215-217].

Also, it has been discovered by T. Shmigalova and Yu. Baikovsky that people engaged in extreme sports have a low level of anxiety, a high level of nervous mental stability, and high speed of emotional sphere, a high motivation to achieve, and have significant adaptive capabilities. It has been established that most representatives of extreme activity have a sanguine type of temperament, which is characterized by mobile, balanced nervous processes. The main mechanism of psychological protection of representatives of extreme activity is the mechanism of objection. The authors consider the causes of extreme behavior in overcoming physical and psychological traumas, the possibility of communication, the desire of new sensations, in particular the feeling of freedom. The results obtained by the researchers explain the fact that mentioned qualities are necessary for the athlete-extreme to quickly decision-making, doing right actions that promotes successful extreme activities, which imposes extremely high requirements for the individual, not only physically, but also psychologically [11].

As we have already mentioned, a high level of nervous mental stability takes a special place in the list of important personal qualities for a successful and as safe as possible extreme activity. Operating environment in extreme sports contain a lot of stress factors that can adversely affect a person with a low level of nervous mental stability, provoke nervous breakdowns and, in some cases, even endanger life, if the person in an extreme situation is confused and does not take the necessary measures to save life. Therefore, a favorable level of nervous mental stability for extreme sports is a necessary component of successful operation in extreme conditions. Moreover, after analyzing the above-described studies, we concluded that extreme sports contribute to the development of stress resistance and increase the level of nervous mental stability. Therefore, we consider it necessary to get acquainted with the concept of nervous mental stability more detail.

Nervous mental stability is understood as an integral complex of congenital (biologically predetermined) and acquired personal qualities, mobilization resources and reserve psycho-physiological capabilities of the organism, providing optimal functioning of individual in unfavorable and stressful conditions of an extreme environment [1, p. 64]. Nervous mental stability includes: an individual self-esteem; emotional stability; approval of surrounding people.

Along with the concept of nervous mental stability, the concept of nervous mental instability is widely used; it should be understood as an integral complex of congenital (biologically predetermined) and acquired personality properties that can determine the probability of a non-optimal type of response to unfavorable and stressful conditions of an extreme environment [1].

These definitions indicate the importance of being sportsmen in a state of medium or high level of readiness in normal conditions or before an extreme situation; that is, a moderate desire for decisive action and rapid response. While, being in extreme condition needs the highest rates of psychological readiness and nervous mental stability.

In our opinion, along with the notion of nervous mental stability is the notion of stress resistance. In some studies, stress resistance is presented as a barrier to the mental adaptation, in others – as emotional stability and the ability to control emotions [2, 3]. Some researchers consider that the ability to withstand large loads and successfully solve problems in extreme situations is the basis of stress resistance. Combination of stress resistance and emotional self-regulation is reduced to a functional system of emotional regulation of activity, characterizing the ability of an emotionally excited person to maintain a certain orientation of actions, adequate functioning and control over the expression of emotions; the ability of a person to successfully solve complex and responsible tasks in tense emotionally-based circumstances, to adequately analyze the conditions of activity, to plan it in advance, to apply adequate methods of action. Thus, psychological mechanisms of stress resistance in the context of its emotional component can be represented

in four approaches: as manifestations of will, as the results of the use of techniques and autogenously training, as the ability to overcome the state of emotional arousal in the course of complex activities, such as integration of various processes and phenomena of emotional, volitional, motivational, intellectual components [2, 5, 11].

Stress resistance is also considered as the individual ability to maintain normal working capacity; as the necessary degree of adaptation to the impact of extreme environmental factors and professional activities; as ability to social adaptation, preservation of meaningful interpersonal connections, ensuring successful self-realization, achievement of life goals, preservation of work capacity and health; as a state of physical, emotional and mental exhaustion, caused by prolonged staying in emotionally tense significant situations [1, 10]. Stress occurs when the body is forced to adapt to new conditions; that is, stress as a holistic phenomenon should be considered as a positive adaptive reaction that causes the mobilization of the organism [2, 11].

Concerning the issue of nervous mental stability and the phenomenon of adaptation precisely in extreme sports, the opinion of O. P. Karpova is interesting. Author considers extreme sports as a model of adaptation in conditions of psycho-emotional stress. General symptoms of adaptation are manifested when specific extreme factors are acting on a person. Stress testing is aimed at the study of them. Stress reactions and stress states that are manifested in extreme situations are a powerful factor in causing humans adaptive behavior. Among the significant number of factors that determine the impact of stress factors on athlete-extreme, first of all, distinguish emotional stability - the ability of the athlete to maintain mental and physical ability to work under the influence of strong emotional factors, ensuring the effectiveness of activities in extreme conditions. Stress resistance in this case is the result of the development of adaptation, as a result of which the body acquires a new quality in the form of resistance to stress factors. This new property is further manifested in the fact that the body can not be affected by those factors to which the person has adapted. Increasing the level of resistance to one risk factor increases its level to other risk factors, so there is a so-called emotional training that increases resistance to stress in general and prevents the violation of the mental sphere of healthy people [4, p. 161-170].

Material & methods

There were examined 180 respondents who are representatives of extreme sports, including 60 representatives of parachuting, 60 representatives of motor sport and 60 representatives of base-jumping. Each of the selected sports has its own specifics.

To determine the level of nervous mental stability of athletes-extreme, the method «Forecast» (Assessment of the level of nervous mental stability) by V. Bodrov was used. The respondent was suggested to give an answer to 84 statements depending on their correspondence to the respondent's personality status, using two answers: yes or no. As a result of using this technique, we determined the following levels of nervous mental stability of athletes-extreme: high, medium and low. To study the level of predisposition to risk, we used the questionnaire of the study of predisposition to risk by G. Shmelev. In the course of the study, the respondent was asked to answer 50 statements using two answers: yes or no. As a result of these methods, we were able to diagnose the following levels of predisposition to risk: high, medium and low. «The self-confidence test-questionnaire» proposed by S. Reizas to diagnose the level of self-confidence was used to investigate one of the components of the nervous mental stability. During the study, respondents were asked to evaluate 30 allegations, using 6 possible answers, corresponding to a specific number of points for a particular statement: «the statement is completely true», «the statement is fairly true», «the statement is more likely to be true», «the statement is more likely to be not true», «the statement is not quite correct», «the statement is not true». With this questionnaire, we identified the following levels of self-confidence: low, medium, high, aggressive.

Materials of the research were processed by the method of mathematical statistics (SPSS Statistics).

Results And Discussion

As a result of the study of indicator of nervous mental stability, we found that 50% of our respondent motorcyclists had an average NMS, 45% of respondent showed a high level and only 5% had a low one. As for skydivers, 65% of this category of respondents showed a high level of nervous mental stability and 35% had an average level. Low level of NPS has not been diagnosed at all.

Representatives of both extreme sports, regardless of their specificity, showed high and average nervous mental stability. After all, both parachuting and motorcycling require the athlete's ability to act quickly in an extreme, often unpredictable situation, stress management skills, self-regulation in stressful, extreme conditions. The high level of nervous mental stability in these cases acts as an obligatory individual property, lack of which can cost life. We assume that the nervous mental stability level may vary due to the experience of extreme sports. We tracked its dynamics based on the experience of staying in extreme activities. Motorcyclists have not shown significant dynamics of the NMS level, with experience this indicator remains at approximately the same level; it is mostly average and high.

Let's consider the same dynamics of representatives of parachuting. At this category of respondents there are significant changes in the level of NMS, depending on the experience, on the number of parachute jumps performed. Among skydivers, who performed from 1 to 5 jumps, the high level of NMS is 40% and the average – 60%; 50% of respondents who jumped parachute 6-50 times have shown the average and high level of NMS. Among

skydivers with experience of 50-620 jumps, a high level of NMS is a characteristic of 78% of respondents.

Consequently, the level of average nervous mental stability of skydivers with experience of extreme activity is significantly increased. Obtained result can be explained by studies of O. Karpova, who considers extreme sports as a model of adaptation in conditions of psycho-emotional stress. Stress resistance in this case is the result of the development of adaptation, by which the organism acquires a new quality in the form of resistance to stress factors. Increasing the level of resistance to one risk factor increases resistance to other risk factors, in this way, emotional training takes place, that increases the stress resistance in general[4].

We suppose that the level of predisposition to risk varies depending on the experience of extreme activity. This opinion has been checked empirically and received confirmation. It has been traced the increasing of the level of predisposition to risk, depending on the experience of occupation of the sport. 40% of motorcyclists with experience of 1-3 years of extreme activity had a high level of predisposition to risk; among motorcyclists who had experience of 4-6 years 71.40% of respondents had the high severity of this indicator, and among the representatives of motor sports with experience of 7-27 years, a high level of predisposition to risk inherent in 75% of the subjects (see Figure 1).

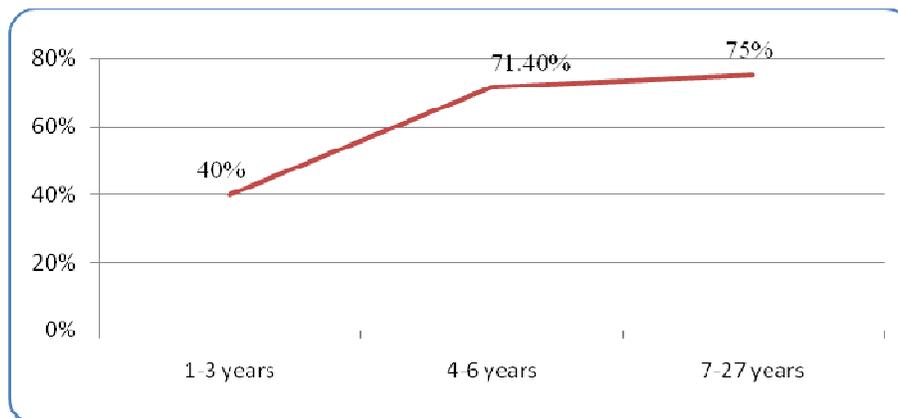


Figure 1. Level of motorcyclists' predisposition to risk depending on the experience of extreme activity

In our opinion, the result is explained by the specifics of motor sport. Motorcyclists, gaining experience, increase the riskiness and danger of their activities, mastering new stunts and new disciplines in motorsport. The sense of risk is increasing and gaining momentum with the acquisition of new skills and experience in driving motorcycle equipment. At the initial stages of mastering a motorcycle risks are much less than in future professional activities, where speed, maneuvers, tricks, obstacles are increasing. Consequently, due to the peculiarities of motor sport with the experience of athletes, the risks and dangers in this activity are increasing.

As for representatives of parachuting, we also traced the change in the level of predisposition to risk, depending on the experience of engaging in extreme activities, namely, depending on the number of parachute jumps performed. But the results are different from the results of motorcyclists. We have followed the reverse trend. 100% of representatives of this sport who made 1-5 jumps had a high level of predisposition to risk. Among skydivers with experience of 6-50 jumps, only 40% of respondents had a high level of predisposition to risk. Among the skydivers, who performed 50-620 jumps high level has been demonstrated by 55.6% of the subjects.

It has been noticed that inexperienced skydivers had a higher level of predisposition to risk, and with experience this indicator in the majority of respondents went down to the average level. The result can be explained by the fact that a high predisposition to risk is needed only for the first jumps that require determination and readiness for a new, an unusual situation for the individual who needs new actions in which the person does not yet have the skills. Therefore, for the first jumps requires a high level of predisposition to risk, which in the first place prompts the person to decide on such a step. Most people come to parachuting just for the sake of risk, to get the thrill and dose of adrenaline; these are, of course, people who are predisposed to risk. With experience, the activities of skydivers are already directed to another, in general terms - to sharpen the skills of staying in the air. There is an adaptation to extreme conditions and they are no longer perceived as risky, unlike the first jumps. Athletes with experience master new parachute disciplines, sharpen the skills of separation from the aircraft, landing, interaction with other skydivers in the air, increase the height of jumps, use faster parachute systems, but due to the experience gained, this does not increase the danger of this activity.

In the empirical study, we also have traced the dependence of the nervous mental stability on the level of predisposition to risk. 25% high-risk motorcycle riders have shown a high level of nervous mental stability, while 66.7% of respondents had an average level of this indicator, and 8.3% had low one. Among representatives of motor sport with average risk tolerance 62.3% of the subjects had a high level of nervous mental stability and 37.7% had average. A high level of nervous mental stability was found among 54% of the representatives of parachuting sports with high level of predisposition to risk and 46% with an average level. Skydivers with an

average level of predisposition to risk showed the following result: 71.4% had a high level of nervous mental stability, 28.6% are characterized by the average level of this indicator (see Figure 2).

As we can see, athletes-extreme with an average predisposition to risk had a higher level of nervous mental stability than athletes with a high level of predisposition to risk. A general correlation analysis of the results between the predisposition to risk and the indicator of nervous mental stability has been carried out using the Pearson correlation coefficient and has been found a significant correlation between these indicators, which is at $r(0.01) = 0.53$.

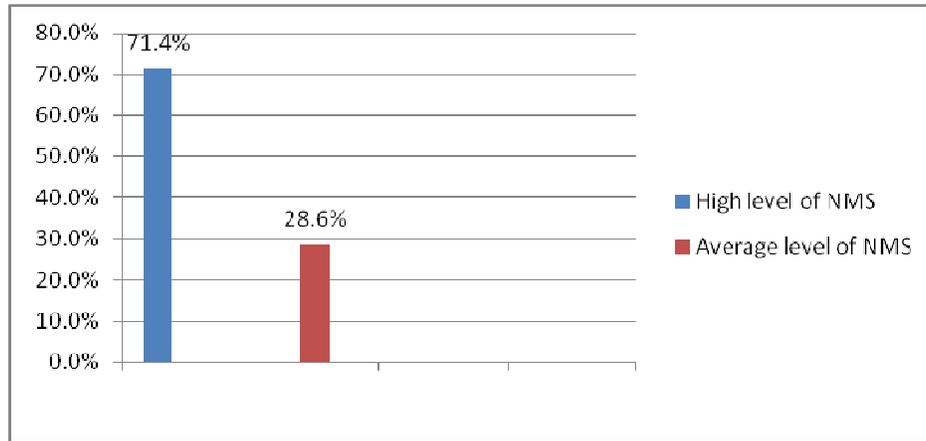


Figure 2. Level of nervous mental stability of skydivers with average predisposition to risk

Thus, the study has been found that respondents in both samples with middle-risk tolerance had a higher level of nervous mental stability than those who have a high level of riskiness. This is explained by the fact that people with a high predisposition to risk in some cases can act thoughtlessly, guided only by emotional factors, such people have a lower nervous mental stability than those who risk a more balanced and rational way, because the first ones cannot always control their emotions in the right moment. Of course, the level of predisposition to risk is also an important mechanism that pushes people to extreme activity, but its excessive level can be the cause of too risky and thoughtless actions that in extreme sports can lead to fatal consequences. Therefore, for representatives of extreme sports who have a high level of predisposition to risk, it is necessary increasing the level of nervous mental stability in order to avoid the negative effects of extreme activities and increase the level of safety in these sports. One of the important components of nervous mental stability is self-confidence. The level of self-confidence directly affects the level of nervous mental stability. After all, the confidence in their skills, abilities and forces allows act carefully, confidently and quickly in an extreme situation without much hesitation.

V. Labunskaya considers self-confidence as a personality property, the core of which is the positive assessment of their own skills and abilities as sufficient to achieve meaningful goals and needs. I. Tolkunova treats self-confidence as a fundamental condition of full possession of himself. It is part of the structure of the ability to predict the results of its life; it affects the choice of strategies in achieving goals in accordance with personal meanings. Without sufficient confidence, it is impossible to succeed in extreme activities, because an uncertain person is often characterized by the presence of doubts and hesitations, which is unacceptable for extreme conditions, in which it is always necessary to act quickly, clearly, adequately and confidently.

The following results have been received during an empirical study of motorcyclists' self-confidence: 57% of respondents had a high level of self-confidence, 13% of them had an average one and 30% of them had too high self-confidence, which is called in the method we used as "aggressive." In the category of skydivers the following results were received: 50% of respondents showed a high level of self-confidence, 15% - an average level, while 35% of skydivers had a level of "aggressiveness". Consequently, the representatives of both sports had a predominantly high and too high ("aggressiveness") level of self-confidence.

We analyzed separately the results of empirical research of representatives of the most dangerous extreme sports in the world - base jumping. This sample attracted special attention due to the specifics of this sport. In most cases only individuals who already have at least 200 jumps from an airplane may be involved in base jumping because of high level of its danger, although the situation in the base jumping differs from ordinary parachute jumps. The study was attended by only experienced athletes who made from 200 to 600 jumps from fixed points.

During the empirical study, we found that representatives of base jumping had a high nervous mental stability as much as 100%. The highest level of nervous mental stability is required due to high danger to athletes' life. The base jumpers have very limited time to take the necessary measures to save lives compared to skydivers, they have a few seconds before landing, because they jump from fixed points - towers, multi-storey buildings, antennas, rocks, which are considerably inferior in height compared to jumping from an airplane, as in parachuting.

It should be noted that the representatives of base jumping had a predominantly average predisposition to risk. By examining self-confidence, it has been identified 80% of respondents with high level of it and 20% with

the middle one. Low level of self-confidence and aggression has not been revealed. In base jumping, stability and equilibrium are needed in everything. This also applies to self-confidence. It has been diagnosed that motorcyclists and skydivers had in a fairly high percentage such a level of self-confidence as aggressiveness; there was no such tendency among the representatives of base jumping. As well as insufficient self-confidence its excessive level also can provoke too dangerous situations. Absence of self-confidence leads to emergence of doubt and indecisive, slow actions that are completely contraindicated because of the specifics of base jumping. Excessive self-confidence (aggressiveness) will lead to thoughtless, too dangerous and incompatible with life action. Therefore, in this case, the presence of a stable high level of self-confidence is an important and necessary component in extreme activity. It has been developed some recommendations for the development of this property after investigating of the psychological features of nervous mental stability. We consider that training of nervous mental stability is necessary both for people who want to do extreme activity and for those who are already representatives of extreme sports. Special methods have been developed to increase the nervous mental stability and expand the psychological reserves of man. Among them there are a variety of methods of mental self-regulation, through which a person can independently influence the emotional, mental and physical condition. Recent years, the following methods of psychic self-regulation are widely used for this purpose: relaxation-respiratory gymnastics, progressive muscle relaxation, yoga, autogenic training, and meditation.

In addition to the methods of self-regulation, there is another group of methods for improving mental stability - these are methods of psychological correction. Methods of psychological correction are aimed at changing those features of the character and ways of human behavior that contribute to the emergence and maintenance of emotional stress and unfavorable level of nervous mental stability. Such features of character are, for example, irritability, jealousy, vulgarity, shyness, inability to communicate with people, uncritical attitude towards oneself, vengeance. The application of different methods of psychological correction can affect the unfavorable features of a person and increase nervous mental stability. Such methods include the method of systematic desensitization, emotional and rational therapy, psychological games, social psychological training, business games, psychodrama, etc. But unlike relaxation methods, which, with some exceptions, can be learned independently, guided by popular science literature, increasing of nervous mental stability with the help of psychological correction methods should be carried out under the guidance of an experienced specialist.

Conclusions.

Consequently, nervous mental stability is one of the most important personality traits for successful pursuit of extreme sports. Nervous mental stability in this case presupposes the optimal functioning of the athlete in adverse and stressful conditions of the extreme environment, the individual ability of the body to maintain normal working capacity, the necessary degree of adaptation to the influence on extreme environmental factors. During the study, it has been determined that representatives of all three studied sports had high and average nervous mental stability, which is necessary for any extreme activity. In parachuting, it has been tracked the increasing of this indicator with experience in extreme sports. To increase the level of nervous mental stability of extreme athletes and people who want to start a career in extreme sports, we have made recommendations that include methods of self-regulation and methods of psychological correction.

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