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THE CONNECTION OF EMOTIONS WITH THE MENTAL STATE OF HIGHLY QUALIFIED WRESTLERS

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ABSTRACT:

The paper considers the aspect of predicting the potential of young athletes in martial arts. The author recommends using genetic markers in case of difficulties. At the same time, the method of dermatoglyphics is of great interest for use in sports selection in the practice of training a sports reserve.

Keywords: forecasting, potential opportunities, young athletes, martial arts, genetic markers, sports selection, training, sports reserve.

Introduction

The modern stage of the development of martial arts is characterized by the growing popularity of non-Olympic types of martial arts. This is primarily due to the loss of entertainment of Olympic wrestling. Therefore, the United World of Wrestling (United World Wrestling, an analogue of the International Federation) is changing the rules of the competition with one goal – to activate wrestlers to conduct effective technical actions and increase competitive entertainment.

Of course, the activation of a wrestler's competitive activity leads to an increase in emotional tension, which may affect the effectiveness of the implementation of technical actions. However, the level of manifestation of emotional reactions largely depends on the personal characteristics of the wrestlers, including individual typological characteristics of higher nervous activity.

In the everyday consciousness of coaches, there is an opinion that aggression accompanies sports activity as a necessary characteristic of an athlete's emotional mood. Also, there is an opinion that the manifestation of aggression in sports activities is one of the factors that can contribute to the mobilization of mental reserves of athletes. At the same time, aggression is a manifestation of the display of the athlete's internal emotions.

Most often, aggression in sports is associated with the manifestation of violence on the part of one or both athletes and looks like a violation of the competition rules. It should be noted that aggression in sports can be associated with internal emotional experiences of martial artists before the start of competitions.

Complex mechanisms of emotional organization in the conditions of sports activity are determined by the personal qualities of athletes in conditions of mental and physical tension. Emerging emotional states in athletes are characterized by specific influences of external factors on internal processes. The processes of emotional specific impact on the mental state



of athletes are associated with the involvement of psychophysiological functions. The subtle connection between mental and physiological processes is manifested in the psycho-emotional state of athletes. If we consider the connection between a mental phenomenon and physiological structures, we can determine which influences, causes or conditions affect the result in sports activity.

Considering that psychophysiological functions are the main link in the formation of psychoemotional reactions in extreme conditions of sports activity, it is logical to expect a connection between the emotional and psychophysiological states of athletes.

Modern wrestling is characterized by an increased level of emotional tension during competitive activity. The struggle is a clash of two personalities with different psychological individual characteristics. Traditionally, wrestling and other types of martial arts are marked as aggressive sports.

Однако, возникает проблема изучения связи эмоций, возникающих у борцов в условиях напряженной деятельности с психическим состоянием.

The purpose of the work was to study the relationship of emotions with the mental state of highly qualified wrestlers.

26 highly qualified athletes, members of the national team of Ukraine in Greco-Roman wrestling (age 22-28 years) were examined.

The hardware and software complex of psychodiagnostics "Multipsychometer-05" was used. A battery of research methods was used: assessment of the level of mental state (Luscher color test), determination of the level of aggression (according to the Buss & Darkee method, determination of the level of emotional excitability (emotional excitability scale), determination of the balance of nervous processes (reaction to a moving object).

Written consent was obtained from athletes, in accordance with the recommendation of the ethics committee and ethical standards of the Helsinki Declaration.

The Statistica 6.0 application software package was used for statistical analysis. Nonparametric statistical analysis was used according to the Wilcoxon criterion with the determination of the lower (25%) and upper (75%) quartiles.

Research results

All athletes were divided into two groups according to the level of aggressiveness: the first group – wrestlers with a low level of aggression (14 athletes), the second group – wrestlers with a high level of aggression (12 athletes).

The results of the study revealed that the group of wrestlers with a low level of aggressiveness is characterized by significantly low indicators of physical and verbal aggression compared to the group of athletes with a high level of aggressiveness (Table 1). The corresponding results were obtained for the parameters of general aggressiveness. In terms of personal and autoaggression, there is a tendency to decrease in absolute values in wrestlers with a low level of aggressiveness. According to the indicator of emotional aggression, no differences were found between the two groups of athletes with different levels of aggressiveness.



Table 1 Indicators of aggression in wrestlers with different levels of aggression (median, lower, upper quartile)

Indicators	Reduced aggressiveness (n=14)	Increased aggressiveness (n=12)
Verbal aggression (conl. units)	3,00 3,00; 4,00	5,00* 3,00; 5,00
Physical aggression (conl. units)	3,00 3,00; 4,00	6,00* 3,00; 6,00
Personal aggression (conl. units)	2,00 1,00; 3,00	3,0 3,00; 4,00
Autoaggression (conl. units)	2,00 0,00; 3,00	4,00 3,00; 4,00
General aggressiveness (conl. units)	12,00 10,00; 13,00	18,00* 15,00; 22,00000

Note. * - $p < 0.05$, compared with a group of athletes with a reduced level of aggressiveness. Results of the study of the mental state (according to the Lusher color test) in wrestlers with different levels of aggressiveness, they indicate a significant decrease in the absolute values of the indicator "deviations from the autogenic norm" in athletes with a low level of aggressiveness (Table 2). The obtained fact, in relation to wrestlers with a high level of aggressiveness, indicates the presence of subjective discomfort in the general condition. Wrestlers with a low level of aggressiveness have subjective comfort in their mental state. At the same time, it was revealed that in athletes with a low level of aggressiveness, the indicator of the "vegetative coefficient" has higher values than in athletes with a high level of aggressiveness. The revealed results characterize a greater contribution of vegetative systems to the formation of a mental state in athletes with a low level of aggressiveness.

Table 2 Indicators of the mental state of wrestlers with different levels of aggressiveness (median, lower, upper quartile)

Indicators	Reduced aggressiveness (n=14)	Increased aggressiveness (n=12)
Verbal aggression (conl. units)	2,00 1,00; 4,00	2,50 1,50; 4,50
Physical aggression (conl. units)	1,00 0,00; 2,00	2,00 1,00; 2,00
Personal aggression (conl. units)	12,00 8,00; 14,00	19,00* 14,00; 22,00
Autoaggression (conl. units)	10,00 8,00; 12,00	9,00 5,50; 11,50
General aggressiveness (conl. units)	15,00 11,00; 18,00	13,50* 7,00; 17,50

Note. * - $p < 0.05$, compared with a group of athletes with a reduced level of aggressiveness. A more optimal mental state is observed in a group of fighters with a low level of aggressiveness. Indicators of fatigue and anxiety in the group of fighters with a low level of aggressiveness tend to decrease. The tendency to increase the eccentricity index reflects the



activity and search for ways to implement the problem with the ability to compromise in a group of athletes with a low level of aggressiveness.

According to the results of the emotional excitability scale, there is a significant difference between groups of fighters with different levels of aggression. Wrestlers with a reduced level of aggressiveness have lower values of + anger and anxiety indicators. At the same time, in fighters with a high level of aggressiveness, the anger index has higher values. The indicator of emotion control is significantly higher in wrestlers with a reduced level of aggressiveness (Table 3).

Table 3 Indicators of the emotional excitability scale in wrestlers with different levels of aggressiveness (median, lower, upper quartile)

Indicators	Reduced aggressiveness (n=14)	Increased aggressiveness (n=12)
Anger (conl. ed.)	8,46 5,82; 9,74	10,50* 7,63; 12,84
Anxiety (conl. units)	5,87 3,52; 7,63	6,36* 4,54; 8,62
Emotion control (conl. units)	6,74 5,03; 8,53	5,43* 3,54; 7,72

Note. * - $p < 0.05$, compared with a group of athletes with a reduced level of aggressiveness. The obtained result indicates the connection of the level of aggression with emotional excitability in highly qualified wrestlers. Reducing the level of aggression helps to optimize the emotional state and increase control over emotions.

The study of the balance of nervous processes indicates a decrease in the indicator of "arousal" in a group of fighters with a low level of aggression. This fact indicates the presence of a balance in the central nervous system between the processes of excitation and inhibition. The indicators "accuracy" and "stability", characterizing the qualitative side of the test, are better in athletes with a low level of aggression.

Table 4 Indicators of the balance of nervous processes in wrestlers with different levels of aggression (median, lower, upper quartile)

Indicators	Reduced aggressiveness (n=14)	Increased aggressiveness (n=12)
Accuracy (conl. units)	2,91 2,53; 3,85	2,26 2,24; 2,31
Stability (conl. units)	3,82 2,67; 5,66	3,47 3,40; 3,87
Excitement (conl. units)	-0,32 -0,82; 0,03	0,09* 0,001; 0,30

Note. * - $p < 0.05$, compared with a group of athletes with a reduced level of aggression. Thus, an increased level of aggressiveness in a group of highly qualified wrestlers affects the mechanisms that regulate the balance of excitation and inhibition processes in the central nervous system. The predominance of arousal in a group of wrestlers with a high level of



aggressiveness leads to a decrease in the stability and accuracy of sensory movements. In addition, an increase in the level of aggressiveness in highly qualified wrestlers reduces control over emotions

Discussion. The obtained results indicate a significant relationship between the manifestation of emotions and the mental state of highly qualified wrestlers. A high level of physical and verbal aggression is associated with a subjective feeling of discomfort, the presence of excitement in the nervous system and, as a result, loss of control over emotions. A low level of aggression in highly qualified wrestlers leads to a feeling of subjective comfort in the mental state and the presence of a balance between the processes of arousal and inhibition.

Some authors believe that aggression is not an emotion, motive or psychological attitude, but a model of behavior. Aggression is a reflection of competition between rivals and can undergo various changes. In addition, a higher level of aggression corresponds to a deterioration of the mental state, namely, increased fatigue and anxiety, reduced compromise in the behavior of athletes, loss of control over emotions.

Biological mechanisms of aggression indicate the support of aggressive behavior by vegetative functions. This fact was obtained in our study. It was revealed that athletes with a low level of aggressiveness have more support from the autonomic nervous system than athletes with a high level of aggressiveness. Reducing the level of aggressiveness in athletes contributes to improving the accuracy and stability of motor skills due to the presence of a balance between the processes of excitation and inhibition of nervous processes.

Our research is consistent with Maxwell's data that aggression is a consequence of anger reactions in athletes. Thus, aggression among wrestlers is not an optimal emotion, because it negatively affects the mental state and, as a result, the quality of motor skills.

Выводы

1. Установлена связь между эмоциями и психическим состоянием борцов высокой квалификации. Высокий уровень физической и вербальной агрессии связан с субъективным ощущением дискомфорта и преобладанием процесса возбуждения в нервной системе у квалифицированных спортсменов.
2. Наличие повышенной агрессивности приводит к росту эмоционального напряжения и повышению субъективного дискомфорта у борцов высокой квалификации.
3. Контроль уровня проявления психо-эмоционального состояния у борцов высокой квалификации даст возможность вносить коррективы в тренировочный процесс.

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