



APPLICATION OF BIORESONANCE DIAGNOSTICS BASED ON ELECTRIC STIMULATION OF MERIDIAN SYSTEMS IN THE PREPARATION OF WRESTLERS

Payzieva Sh.Yu., Djmaniayazov D.F.

Newmax Technology, Taskent State Medical Academy of Uzbekistan shairapayzieva@gmail.com

INTRODUCTION: The problem of an assessment of the psycho-physiological state of athletes for the purpose of efficient correction of training process at all stages of preparation and participation in sports competitions has not been solved. In order to attain victory in high level sports requires training loads with large volume and high intensity. All trainers want success for their athlete. To achieve this goal, trainers keep pushing athletes to increasingly higher training loads. However, whether sportsman's body (especially juvenile period) can handle these psychological and physical loads, or the whether the athlete has the potential to respond to these loads and achieve success without harm to his health and psychological make-up is a difficult problem to solve and requires intuitive and professional abilities of the trainer and his nearest assistant – a doctor in sport medicine [2,3,4,5]. We propose the use innovative technology - software/ hardware complex based on electrical stimulation - as part of the automated work place (AWP) for doctors in sport medicine (DSM). This diagnostic tool for assessment of the psycho-physiological state of athletes can help solve this problem [1]. This process can survey a sportsman's health state during all phases of training – before physical loads, during, and after training, constantly providing objective results of the work. This allows one to analyze and forecast a sportsman's performance reserves. The aim of this research was to test psycho-physiological state of wrestlers with a software-hardware complex based on electric stimulation of biological active points and give recommendations for improving and enhancing athletic performance. Such research allows us to also reveal the latent pathology of bodies and systems, in order to send the athlete to the doctor for timely treatment.

METHODS: Participants of this study were 30 wrestlers (7 women, 23 men). All athletes were between 15 and 28 years old. The electro puncture diagnostics procedures used followed the methodology developed by I.A. Lednev [1]. Both AWP and DSM were used to detect and measure the psycho-physiological responses of athletes. During measurement will receive electro frequency from bioactive points situated on 14 main meridians system of body, which were first described in detail by Riodoraky and Nakatani in 1956 [1]. The AWP DSM complex - an integrated software and hardware device allows us to collect the following information:

- Integral characteristics:
- Functional state is the total of somatic status components and psychoemotional background on a 5-score scale (Excellent, Good, Satisfactory, Unsatisfactory, Recovery Is Needed);
- Person's adaptation potential (%) - readiness to fulfill his functions;
- Vegeto-emotional tone is the need of receiving and giving energy (Correlation with Lusher test);
Wrestlers psychoemotional portrait according to acupuncture diagnostics results;
Store and display individual and group test results;
Reflect the alterations of recipients' test results over time.

RESULTS: Total average of integral estimates: Adaptive Potential, Functional State, Vegeto-Emotional Tone, Psycho-Emotional Status, Sympathetic/Parasympathetic Activity Ratio, Yin-Yan of all participants in the experiment are shown in the Table 1.

Adaptation Potential(AP) - it is the rate of body's harmonious state as a balance of his internal states – physiological and mental - in respond to environmental conditions. There are 5 state of AP considered: 0-29% - Recovery is needed. 30-54% - Unsatisfactory state, 55-69% - Satisfactory state, 70-84% - Good state, 85-100% - Excellent state

Table 1. Total average of integral estimations of all experiment participants

Table with 6 columns: 1. Ave Adaptive Potential, 2. Functional State, 3. Vegeto-Emotional Tone, 4. Psycho-Emotional Status, 5. Sympathetic/Parasympathetic Activity Ratio, 6. Yin-Yang. Data includes percentages and descriptive terms like 'Satisfactory -23%', 'Balanced -73%', etc.

The results of this study (Table 1) show that average AP of participants is very low 25.9% which corresponded "Recovery is needed". This situation required to analyze findings and develop recommendations for improve AP of wrestlers. The same situation was with results of Functional state: 36% of wrestlers were classified as "Recovery is needed". Person's functional state is the total of components of the body's medical (clinical states) and its psycho-emotional background. If this state lasts for a long time it may lead to total loss of body's own resources and, as a result, may cause disease, mental disorder, emotional breakdown. Trainer should take into account these trainees and organize rehabilitation procedure for these athletes.

Functional State Of Organs & System of Wrestlers: Results of diagnostics by AWP DSM complex pointed out that increment in activity of the Hypophysis is monitored at 57.8% and the Sympathicotonia effect in 61.2%. Functional tension of thyroid gland is observed in 7% of the wrestlers, in our opinion, it comes from an ecological specificity of natural region, deficit of iodine. Deficit of specific microelements (F, Ca,...) were the cause onset latent inflammation mucous membrane of mouth cavity at 64.70% tested athletes. Water and electrolyte imbalance, disorder of conductivity of nerve impulses in 54.70% of participants of experiment connected with lack of adequately diet and this lead to myalgia, from time to time muscular spasms. Stigmatization of cerebral tension was observed in 27.3% of wrestlers, which related with constantly brain injury. Three types of overloads to the spine are considered: intervertebral disks at 24.6%, thoracic spine at 29.7%, lumbosacral part of spine 64.5 % of wrestlers. In 18.4% of athletes symptoms of neuro circulatory dystonia which can be reflected in functional activity of vital organs were noted: lungs, cardiovascular system. 49.3% of the wrestler's symptoms were in from a functional tension in the heart. In 33.8% of athletes, a chronic inflammatory processes of the upper airways, ENT organs were noted: 7%-vasomotor rhinitis, 12% - tonsillitis that is reflected during continuous physical trainings and can lead to a syndrome of endogenous infection. 53.2% of athletes were noted to have disorders of the immune system that affects indicators of adaptation potential (see above). Symptoms of spastic colitis was observed in 41.1% of athletes which is connected with the ecologist climatic condition and food of the region.

Psychological portrait of Wrestlers: Every third athlete accurately realizes the own vital problem, in every tenth athlete were noted psycho power signs of persistence of self-affirmation, and 50% of athletes we observed high self-esteem signs that it is necessary to consider during sports occupations. Almost at all athletes these or those symptoms of neurosis, irritability were noted. Obvious stress is seen in 15%, and excessive intellectual loadings were noted in 12% of athletes.

CONCLUSION AND APPLICATIONS: 1. Vegeto emotional tone was not very high and in every third athlete was low. 2. Psychoemotional status: 8% of wrestlers have tension of compensatory force of the body, 12% - Neuropsychic tension, 7% - Neuropsychic weakness (asthenical) in 27%. The trainer should consider this state and use a correction program in the course of preparation in sportsmen capable to achieve high sports results. 3. The functional state at 28% of athletes unsatisfactory that demands rehabilitation: correction the mode of carrying out sports training, correction of food, a nutrition value of the consumed products. 4. Almost all athletes have symptoms of neurosis, irritability, 50% high self-esteem, at 10% stress loads that demands psychological qualification of the trainer. The research also showed that AWP DSM can be effective, simple diagnostic method, which should be more frequently applied in functional and psycho emotional examinations among sportsmen of different kinds as well as in estimation of recovery therapy effectiveness. RECOMMENDATIONS: 1. For effective training, wrestlers need to choose the adequate good balanced high-calorific high-quality nutrition. The trainer needs to apply correct physical loads in a planned order, considering the individual physical capacities of each athlete. 2. On the basis of the obtained data on the basis of "the Module Correction", by results of diagnostics was formed the individual program rise the resistance to stress with the biological feedback (BF) in combination with method of "Colortherapy". 3. Application of AWP DSM for improving Adaption potential of Wrestlers. 4. Organization constantly monitoring wrestler's health state before, during and after trainings and correction their psychological and physiological state by AWP DSM.

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