FORMATION OF STRESS STUDENTS IN THE PROCESS OF NOTIONS OF MARTIAL ARTS IN HIGH SCHOOL

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Annotation. Various aspects of the development of resistance to psychophysiological stress among students in the classroom arts. In the experiment involved 40 students (20 boys, 20 girls). In the experiment, teaching methods and means of special psychological training in the martial arts. Disclosed the specifics of individual psycho-oriented methodology in the modern system of martial arts. The possibility of its use in physical education classes. It is noted that not all stress are barriers health, and only excessive. The most destructive are excessive psychogenic stresses caused by adverse of psychological factors. Psychogenic stress has a great destructive impact on health. It is a major cause of morbidity students. Recommended didactically well-designed prevention techniques.

Keywords: psychophysiological, stress, martial arts, students, teacher, technology, physical education.

Introduction
Urgency of this research is connected with critical worsening of indicators (including psycho-physiological) of students’ health in Ukraine. It its turn, it is caused by the fact that educational process at HEE, especially last time, often is connected with nervous and emotional overstrain. Excessive psycho-physiological stresses, caused by transition of higher educational process to Bologna system, by increasing of informative scope of academic subjects and by general worsening of social-economic, ecological and other factors, destroy both physiological and psychological students’ health.

Numerous scientific researches [5; 6; 9] confirm the importance of these problems. For example, Yu. Moseychuk [9] in his scientific works shows negative trend in students’ emotional-behavioral responses: подтверждают 69.6 % of students suffer from hypochondria, 63.1 % – from depression, 54.4 % – from psychasthenia, at 52.2 % of students hysterical and at 73.9 % – schizoid responses were found. All they demonstrate increased level of social frustration, which maximally manifests at 1st year of study (68%), a little bit less – at 3rd year – (58%) and fifth (45%) as well as substantially decreased indicators of mood: at the beginning of academic year they are 47.8 ± 6.3, in period of examination session – only 19.3 ± 2.9 (р < 0.001).

The work has been fulfilled as per combined plan of scientific & research works in the field of physical culture and sports for 2011-2015, 3.1 “Improvement of program-normative principles of physical education at educational establishments”.

Purpose, tasks of the work, material and methods
The purpose of the works is to study development of HEE students’ resistance to psycho-physiological stresses, through training of martial arts as scientific-pedagogic program of physical education’s differentiation at higher school.

Results of the researches
Scientific researches [2; 6; 10; 11] points that level of psycho-physiological adaptation and self regulation of human organism are in direct proportion to the state of his health. Therefore: Factors of influence, which can breach psycho-physiological adaptation, are factors, which are negative for health. One of such factors is excessive stress. In physiology, psychology and pedagogic of physical education and sports the term “stress” was borrowed from geology, where it means the level of strain between strata of the earth.

Stress factors are rather various, but among them it is possible to mark out two categories: negative and positive. Division can be carried out by the source of irritator’s origin – physiological or psychological factors. Owing to influence of different stressors, stresses appear. But, in spite of variability of stresses, they are united by the fact that under influence of stressor, in organism a number of certain adapting responses appears, which are directed at ensuring of defense. These responses can be noted as general adapting syndrome or stress.

Excessive irritator causes reflexive secretion of certain stress hormones (adrenaline and nor-adrenaline). But, though adapting responses of organism are of stereotype character, the range of hormones’ shifts of different people differs.

Adequate hormonal changes are required for realization of adapting process, when hormones mobilize reserves of organism for overcoming of external obstacles, leading organism to state of increased physical readiness. With it, regulation of nervous system changes, all processes in organism are activated or inhibited, in compliance with demand. It is pointed at quickest obtaining and re-distribution of energy, which is required for defense.

After rest and stoppage of stress influence, the content of hormones in blood restores up to normal value, if there were no irreversible changes. This initial part of neuro-endocrine responses to stress is very important and has positive character. But, is response to stressor appears too often or it does not lead to consumption of prepared vegetative reserves by additional physical load, then stress changes will result in psycho-somatic disorders of organism. Long-term stress results in exhaustion of organism; increased irritability, overtiredness, depression and different diseases appear.

Stress-system plays important role in development of psycho-somatic diseases. There appear pathological processes, which are called diseases of adaptation. There is an opinion [2] that 93% of different diseases appeared or re-
appeared in the period of increased stress. Long stress inhibits immune system. For example, students have inhibited immunity during examination session. With it, inhibition of immunity make person sensitive to different diseases. At present immunity-inhibited states are rather frequent. For example syndrome of “chronic tiredness” belongs to such states. This disease is difficult to be diagnosed, because symptoms are rather various. Traditional treatment of “chronic tiredness” brings to temporary improvement of health, but for effective cure it is necessary to influence on stress systems.

Stress can lead to insular diabetes. It provokes CAD: for example 80% [2] of CAD patients have increased activity of stress-system, with it they have insufficiency of stress-limiting systems. Half a year before cardiac infarction the level of stress significantly grows. It leads to hypertonic diseases and arteriosclerosis. It causes delay in sodium secretion, facilitating hypertonic disease. It activates mutative processes and stimulates oncologic diseases.

Stress is the most frequent reason of depression and apathy. This is because apathy is a state of passivity, it is connected with reduction of brain cortex tone. But, though apathy state if subjectively felt heavily, may be it as well as depression are necessary and switch on the mode of preservation of organism’s energetic resources, if there is deficit of them. May be depression, as it is, is not a reason of a disease. Diseases and bad mood is likely one side of the coin, when a person meets insufficiency of vegetative resources.

Thus, one reason (excessive stress) can give birth to different after effects (different diseases). Conclusion is as follows: health can be rehabilitated by therapy of nervous system’s disorders and prophylaxis of stresses.

So, prophylaxis of students’ diseases can be reduced to stress-prevention or correct responding to the states, which accompany stresses. For stress fighting it is necessary to take long-term, but not short term measures. With full absence of any prevention measures chronic, difficult to be cured, somatic diseases, neurosis and even suicide can happen.

It is necessary to eliminate exposure of organism to excessive irritators. But for appearance of stress and its after effects it is not compulsory that irritator should be strong and unusual. Besides, life would be uninteresting without stresses. That is why, if it is impossible to eliminate the influence of stressor, it is necessary to approach the problem from other side: it is necessary to adequately response to irritators. It is desirable that person should have been taught to respond to stressors adequately in his childhood. Correct responses to stressors shall be taught by pedagogues.

The other way – is to activate stress-limiting systems. Human organism contains stress-limiting systems. If to activate them, it would be possible to neutralize harmful influence of stresses on organism. Most of patients suffer from increased activity of stress-systems; such patients have deficit of stress-limiting systems. Human organism has several stress-limiting mechanisms, which improve adaptation abilities.

Owing to our personal sport-pedagogic and scientific experience we should like to assume hypothesis about interconnection of training process and stress state of sportsman. The matter is that sport training and competition are permanent “adapted” stress. In other words, psycho-physiological norm of sportsman – is stable (stress-limiting) stress state with domination of nor-adrenaline over adrenaline in percentage of blood.

Especially it concerns such kinds of sports like martial arts, training proves of which, in our opinion, meet definitions of psychological and physiological stresses, which are given in scientific-methodic literature [3].

Having studied specificity of will activity in different kinds of sports, researches [1; 7] discovered, that such features as commitment, initiative and independence, decisiveness and brevity, determined by, mostly, neuro-dynamic and psycho-dynamic qualities, are dominating among representatives of martial arts.

Martial arts are characterized by presence of hard physical contact with adversary and variants-variable conditions of competitions. Thy put forward high requirements to ability to withstand impacts, to pain resistance with blows, throws and holds, to ability realize high psycho-physiological concentration and rely only on own forces.

Analyzing martial arts, specialists [7; 8] mark out the following peculiarities: complexity and poly-variant character of competitions; duel is carried out in frames of strict rules, observance of which is followed by referees, and is a series of fights with different adversaries; high psychic loads, connected with variety of adversaries, need to have difficult techniques and skills (techniques in individual, inconvenient for adversary manner, tactic methods, reflexive control: discovering of adversary’s intentions and increasing of own unpredictability); special psychological state – “fighting spirit”, “sport fury”, “strive for victory, for success”; maximal influence of this kind of sports, in comparison with other, on formation of personal manner of behavior in different life situations, in formation of appearance.

In modern martial arts’ training, which is based on extremely high and intensive loads, ability to perform training program without considering tiredness and, sometimes, pain is of special importance. All these are called in ordinary life “to endure”. Ability to endure in martial arts, besides ability to resist blows, manifests in the brightest way in “30 seconds”, i.e. in last seconds of duel, which often determine results of competition. It is trained by gradual selection of stronger and stronger partners and by fulfillment of training exercises in accelerated mode.

In practice of martial arts’ teachings there are used methods of divided and whole exercises, considering their effectiveness for persons of different typological peculiarities of psychic. When working with students, who have weak nervous system, it would be didactically correct to apply method of divided exercise; when working with students with strong nervous system – method of whole exercise.

Concerning training of special physical abilities, it would be purposeful to consider that: “The greatest changes of psychic state in direction of strain increase of persons with weak nervous system are caused by interval and speed methods, the least – variable method (continuous, monotonous work). For persons with strong nervous system the highest psychic strain is facilitated by greater load and the least – by interval and speed load” [4, pg. 134-135].

89
Students, who train martial arts in HEE and have inert nervous processes, master perfectly little scope of movements in typical conditions with little tactic variability. Transition to mastering of something new would be didactically correct only after solid psycho-physiological fixing of previous material. Students with increased mobility of nervous processes perfectly master (with further improvement) different movements in different tactic situations against the background of different stressors.

Consideration of typological peculiarities shall be provided with using of competition method of training. Effectiveness of technical-tactic as well as special physical and psychological students’ with weak nervous system features during control competitions implies positive shifts. However one should not misuse this method, because it can result in exhaustion of nervous system, that can have rather negative after effects for students’ psycho-physiological health in conditions of credit-module system, when practically every week there are tests in profile discipline (stressors); while for students with strong nervous system competitions are wonderful stimulator (the more they are – the better it is, or, in other words, it is didactic principle of compensatory transition of quantity into quality).

Indicators of sensing metering and accuracy of physical exercises’ fulfillment, depending on duration of total time of study at HEE (mean value of minimal sensations’ increment (M±m) and accuracy of exercise’ fulfillment C±mc %)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>1 semester</th>
<th>2 semester</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M±m</td>
<td>C±m</td>
</tr>
<tr>
<td>Kinesthetic analyzer</td>
<td>18.11±1.04</td>
<td>22.13±5.4</td>
</tr>
<tr>
<td>Visual analyzer</td>
<td>16.5±0.9</td>
<td>20.77±5.1</td>
</tr>
<tr>
<td>Accuracy indicator</td>
<td>60.0±3.0</td>
<td>19.96±4.9</td>
</tr>
</tbody>
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Conclusions:
Scientific researches [5; 6; 9; 10; 11et al.] of recent years in the field of physiology, psychology and pedagogic of physical education prove that the best response to stress is physically active behavior. A person shall be taught to train physical culture exercises since early childhood that is why pedagogic prevention of stress-origin disease is the most effective.

We can conclude that not any stresses are barriers of health, but only excessive ones. The most destructive are excessive psycho-originated stresses, caused by unfavorable psychological factors. Psycho-originated stress destructs health. It is the main reason of students’ diseases. In connection with what didactically correct preventive methodic are required.
References:

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