

**WORKABILITY'S RECREATION METHODIC WITH APPLICATION OF CUPPING MASSAGE AND AUTOGENIC TRAINING OF WOMEN STUDENT TEAMS' BASKETBALL PLAYERS**Kozina Zh.L.<sup>1</sup>, Kozhuhar L.V.<sup>1</sup>, Sobko I. N.<sup>2</sup>, Vaksler M.A.<sup>1</sup>, Tihonova A.A.<sup>1</sup><sup>1</sup> H.S. Skovoroda Kharkiv National Pedagogical University<sup>2</sup> Kharkov National Economic University

**Abstract.** *Purpose:* to experimentally substantiate effectiveness of non traditional complex methodic of recreation in female basketball players' training process. *Material:* 22 basketball players of women student's team participated in the research. Pedagogic testing was conducted by 12 tests in special physical and technical fitness. Psycho-physiological testing was conducted by program PSYCHO-DIAGNOSTIC. Groups were trained by identical programs during 9 weeks. *Results:* we authors observed increased physical and technical fitness of basketball players. Besides, quantity of mistakes in response to visual irritator reduced. It indirectly witnesses about strengthening of nervous processes. There was registered influence of mind on quality of organism's recreation after physical loads. *Conclusions:* the authors recommend methodic of cupping massage, combined with autogenic training. Autogenic training implies repeated pronouncing by instructor (or independently by sportswomen) of text, describing coming turn by turn natural images. Peculiarities of massage were influence of massage passes on muscles and ligaments. Cupping massage was used after warming up classic massage techniques.

**Key words:** recreation, basketball, massage, psycho-regulation, girl students. of coming turn by turn natural images

**Introduction**

Recreational processes take an important place in training of sportsmen and require effective and practical methods, which would not cause adverse effects [1, 3, 7, 9, 10, 13, 17]. Massage is rather effective mean of workability's recreation [2, 4, 18, 19, 20]. Its positive effect is undoubted [1, 2, 6, 20]. But problem of recreation of workability in basketball has still remained unsolved [11, 12, 14, 15, 22]. It is connected with the fact that loads in basketball require high physical fitness [23, 25, 26, 28, 31, 33]. That is why classic massage can not satisfy demands of modern basketball.

As P.B. Yefimenko (2009) [6], Yu.S. Slyzniuk (2009) [21] note at modern stage ancient method of cupping massage is becoming more and more widely spread; main action of it is ensured by creation of vacuum and activation of blood circulation. Besides, in works [5, 14, 22] autogenic training as mean of psycho-physical condition's normalizing, vegetative balance optimizing and adaptation processes' improvement, is described. It is logical to assume that cupping massage can be effective in basketball. Also we can assume that effectiveness of cupping massage can be increased with application of autogenic training. The latter also develops so important for basketball psychological and mental abilities.

However, at present methodic of cupping massage in combination with autogenic training has not been being worked out and used in training practice of women-basketball players.

**Purpose, tasks of the work, material and methods**

*The purpose of the work* is to experimentally substantiate effectiveness of non traditional complex recreation methodic in basketball training process, which combines cupping massage and autogenic training.

In the research basketball players of women student's team of KNPU, named after G.S. Skovoroda, participated (11 sportswomen – experimental group and 11 – control group). Before experiment the groups were tested by pedagogic and psycho-physiological tests (in November 2014 – before pedagogic experiment and in January 2015 – after pedagogic experiment). The groups were practically identical before experiment; calculated values of Sjudent's t-criterion were less than critical. The groups were trained by identical programs during 9 weeks. In experimental group we practiced the worked out methodic of recreation. In control group we use classic massage.

Pedagogic testing was conducted by 12 tests, which are used in combined teams of Ukraine and Russia [14]. Psycho-physiological tests were the following: determination of time of simple and complex response to light irritator in different modes of signal's supply. Tests were conducted by program "Psycho-diagnostics" [16].

**Results of the research**

We worked out methodic of combined application of cupping massage and autogenic training (AT). The methodic implies repeating of text, describing alternating natural images, by instructor or independently by sportsmen. With application of such AT methodic text can be varied in wide range, but for achievement of required effect it is necessary to follow main principles: 1- the best relaxation effect is reached with the help of image of grand landscape ("ocean", "deep river", "glade with a lot of flowers", "sky, covered with stars", "sun shine" and so on); 2 – images of nature shall be beautiful, easy for perception, well known in everyday life; 3- text AT is constructed so that sinking in natural image would be gradual and smooth [14].

Besides autogenic training, cupping massage was a component of complex methodic. The massage was applied twice a week after training. Peculiarity of the massage is its influence on not only muscles, but on ligament as well.

Before starting of cupping massage we carried out light stroking with hands and rubbing in of massage oil. Then we took silicon cup (200 ml volume) and created vacuum in it by pressing it when putting on body. Duration of massage was 5-15 minutes everyday or on alternate days. Time of massage was chosen individually.

Application of authors methodic of cupping massage's combining with modified form of autogenic training for recreation of female basketball players resulted in strengthening of special; physical and technical fitness. It is witnessed by improvement of results of test "Jump quickness": in experimental group quantity of jumps for 20 seconds increased from  $26.33 \pm 5.13$  times to  $35.67 \pm 4.89$  times ( $p < 0.01$ ). In control group such changes are unconfident (from  $32.33 \pm 9.31$  times to  $32.50 \pm 9.79$  times ( $p > 0.05$ )) (see fig.1). Analogous results we received in test "Speed technique": in experimental group time of test fulfillment reduced from  $190 \pm 6.0$  sec. to  $139 \pm 5.4$  sec. ( $p < 0.05$ ). In control group – from  $10.07 \pm 0.76$  sec. to  $9.83 \pm 0.63$  sec. ( $p > 0.05$ ) (see fig.1).

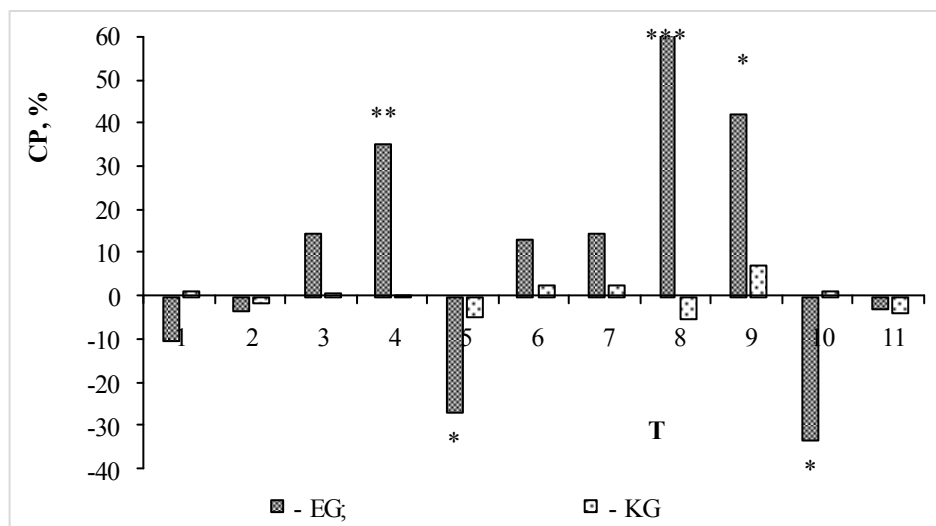


Fig.1. Change of female basketball players' physical fitness resulted from application of methodic of workability's recreation:

1 – 6 meters" run, sec.; 2 - 2\*28 meters" run, sec.; 3 - High jump, cm; 4 – "Jump quickness", quantity of times; 5 – "Speed technique", sec.; 6 – Throw of filled ball from run, meters; 7 - Throw of filled ball from the spot, meters; 8 – Ball throws from middle distance, q-ty of hits from 10; 9 – Penalty throws, q-ty of hits from 20; 10 – Special endurance, sec.; 11 – HBR in rest, b.p.m.<sup>-1</sup>; \* -  $p < 0.05$ ; \*\* -  $p < 0.01$ ; \*\*\* -  $p < 0.001$ ; EG - експериментальна група; CG – control group; T – tests, CI – change of indicators.

Besides, in experimental group we observed increase of throws" accuracy (middle distance from 10 throws): from  $2.50 \pm 1.05$  times to  $7.33 \pm 1.97$  times ( $p < 0.001$ ), in control group such changes were not confident (from  $1.76 \pm 0.82$  times to  $1.67 \pm 1.21$  разів ( $p > 0.05$ )).

The worked out authors" methodic, combining cupping massage and modified autogenic training resulted in reduction of mistakes in simple and complex responses to visual irritator that indirectly witnesses about strengthening of nervous processes (Ye.P. Ilyin, 2011; V.B. Lizogub, M.I. Makarenko, 2012).

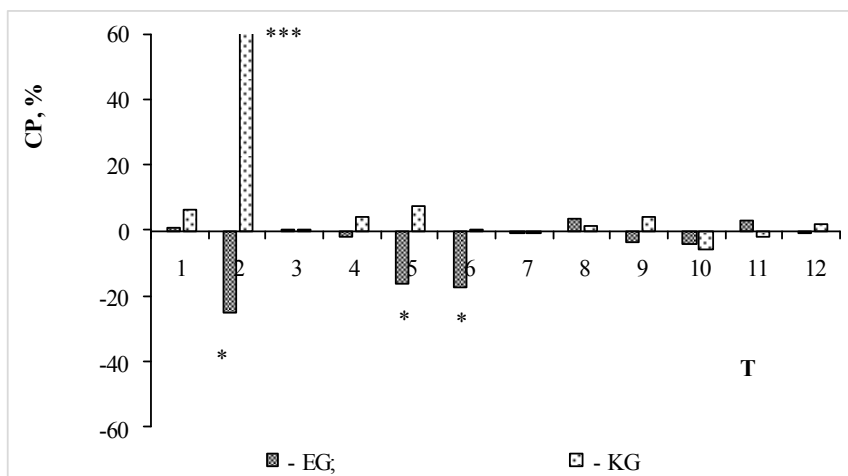


Fig2. Change of indicators of female basketball players' psycho-physiological potentials resulted from application of authors' methodic of workability's recreation:

1 – Simple visual motor response, time, m.sec.; 2 – Simple visual motor response, mistakes, quantity; 3 - Simple visual

motor response, mistakes S, m.sec.; 4 – Complex visual motor response, time, m.sec.; 5 - Complex visual motor response, mistakes, quantity; 6 - Complex visual motor response, S, m.sec.; 7 - Complex visual motor response with feedback, time, m.sec.; 8 - Complex visual motor response with feedback, mistakes, quantity; 9 - Complex visual motor response with feedback, S, m.sec.; 10 - Complex visual motor response with feedback, minimal time of signal's exposition, m.sec.; 11 - Complex visual motor response with feedback, general time of test's fulfillment, m.sec.; 12 - Complex visual motor response with feedback, time of coming to minimal exposition, m.sec.; \* -  $p < 0.05$ ; \*\* -  $p < 0.01$ ; \*\*\* -  $p < 0.001$ ; EG – Experimental group; CG – Control group; T – tests; CI – Change of indicators, %

In experimental group quantity of mistakes in complex visual-motor response reduced from ( $\bar{x} \pm S$ ) 14.67 $\pm$ 2.34 to 12.33  $\pm$ 2.25 ( $p < 0.05$ ), while in control group analogous changes were unconfident (from 13.0 $\pm$ 3.85 to 14.0 $\pm$ 3.69 ( $p > 0.05$ )).

### Discussion

Potentials of construction of training process with application of combined sportsmen's recreational means (including sportswomen-basketball players) have not been studied sufficiently yet [24, 27, 29, 30, 32]. We initiated an attempt to determine potentials of complex application of cupping massage after classic massage and modified autogenic training.

Application of this methodic increased desire of experimental group members to fulfill exercises for general and special endurance (as a rule sportsmen of all age groups do not like them). Besides, efficiency of tests for special endurance in basketball improved. We connect this fact with influence of cupping massage on blood circulation system [21] and detoxication of organism. In combination with sportsmen imagination's concentration on abstract images effectiveness of cupping massage increases. It agrees with data of authors, who studied complex influence of different recreational means. It can be explained by the fact that conscious approach to any training aspect significantly strengthens direct effect of training factor [12, 13, 14, 22].

Thus, application of complex methodic of workability's recreation is rather effective in comparison with different traditional methodic (classic massage, which was used in control group).

We have proved that mind can influence on organism's recreation just after loads. In compliance with principles of motor physiology [23] and practical experiments [5, 6, 12, 13, 14, 22], coordination interlinks between separate sectors of nervous system and nervous muscular apparatus improve. It was confirmed by received by us data concerning improvement of female basketball players' coordination (improved accuracy of throws, reduction of tests' with basketball technical elements fulfillment time).

### Conclusions

1. The authors worked out methodic of combined application of cupping massage and autogenic training. Autogenic training implies repeating of text, describing alternating images of Nature by instructor or by sportsman independently. Peculiarity of massage application was influence of massage passes on muscles and ligaments.

2. Application of authors methodic of cupping massage combined with modified autogenic training resulted in improvement of special and technical fitness.

3. Application of the authors' methodic also resulted in reduction of quantity of mistakes in simple and complex responses to visual irritator that indirectly witnesses about strengthening of nervous processes.

The prospects of further researches imply improvement of system of sportsmen workability's recreation.

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### Conflict of interests

Authors declare absence of any conflict of interests.

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