

FEATURES OF THE TRAINING PROCESS OF HANDBALL PLAYERS OF HIGHER QUALIFICATION BETWEEN ROUNDS IN THE COMPETITIVE PERIOD

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Annotation. *Purpose:* the technology of preparation of athletes in accordance with the requirements of the system approach. Team management methodology disclosed in terms of the training process in the competitive period between rounds of the regular championship of Ukraine. *Material:* the experiment involved 85 athletes aged 18-32 years. *Results:* The recommended during pilot training to perform technical and tactical actions in lockstep future games. Testing and modeling training - at a more complete simulation of conditions of competition. Shock training to perform with significant excess volume and intensity. Shock-modeling training - close to a match where the simulated conditions and confounding factor. The most efficient and effective indicators to consider: the number of substitutions in one match - 8-12 times; residence time player on the court - 12-15 minutes; preferred time of travel players during replacement - 3-5 minutes; heart rate after a rest - 100-120 beats per minute. *Conclusions:* The developed model microcycle training process handball players between rounds of the Championship of Ukraine.

Keywords: handball, microcycle, preparation, process, system.

Introduction

In sport games solution of problem of modern sport training's improvement is especially difficult. On the one hand there is no objectively measured result in games and on the other hand this result depends on the whole complex of quite different factors, differently compensated and interdependent at various stages of many years' training [1]. That is why control of training process of highly qualified players requires clear knowledge of their condition at certain stages of training, scientifically grounded complex control of the whole process [2].

With such approach to control role of choice and registration of system of factors, which influence substantially on competition results, increases significantly [8,10]. It results in need in studying of competition functioning, integral reflections of fitness's levels as one of important tasks of control in system of informational provision of managements [3,11]. As main directions of methodic a number of scientists [6,7,9] offer methods, depicted in fig. 1.



Fig.1. Methods of effective realization of training's programs and purpose.

Exactly strive for proper provisioning of competition functioning conditions tasks of training at different stages and periods of annual cycle [7,9], and as a result it is necessary to know not only the structure of competition functioning but also factors, which condition its effectiveness and positively influence on sport result [3].

Special means of every training in model micro cycle of qualified handball players are oriented on improvement and maintaining on optimal level of special physical qualities and organism's functional potentials. A number of

scientists put forward a statements, which concern model micro-cycles: quantity of exercises' repetitions, intensity, duration, intervals and character of rest between series [5,10]. Some authors proved that correct alternation of loads and rest facilitates better development of physical qualities and organism's functional potentials against the background of tactical tasks' solution [2,6,8].

It was reflected in different kinds of sports, but up to nowadays it has not been elucidated for handball players' training in inter tour competition period. It is quite natural that absence of systemic work on this problem – control of training process in handball – does not determine the level of its urgency. But our own experience of scientific-practical work with combine teams and teams of Super league of Ukrainian championship, analysis of modern literature, devoted to this problem, give understanding that to day one of problems is discordance of theoretical works about sport games and their insufficient implementation in practice. It permits for us to think this problem to be really urgent.

The research has been fulfilled in compliance with plan of scientific research works of department of physical culture and sports theory and practice of Zaporozhye national university "Theoretical-methodic principles of individualization of training process in game kinds of sports".

Purpose, tasks of the work, material and methods

The purpose of the work is working out of team control methods in conditions of training process in competition period between tours of regular championship of Ukraine.

Results of the research

Our research was oriented on determination of means and methods, which would permit to surely maintain condition of players and their functional state at high level, considering intervals between game loads and in training process between tours of competition period. Alongside with it one of local tasks of our research, in our opinion, was achievement of such training effect, which would permit during long time to preserve achieved indicators of physical, psychological and functional fitness.

It is of common knowledge that during handball match there are changes of players depending on situations, tactic schemas, for keeping temp and so on. Some teams constantly replace one-two backs with forwards. It results in interruptions in loads-rest alternations, because it is impossible to envisage duration of game episode.

From this fact we noted that general tea, HBR usually fluctuates between the lowest and the highest, independent on status of the match and its intensity. We determined that before coming of players on site HBR is 160-180 b.p.m. As a result of replacements, if handball player had rest about 5 minutes, HBR was 90-120 b.p.m. Percentage of mistakes' correlation was within – 0,3%. With rest up to 3 min. HBR reached 120-140 b.p.m.; mistakes – up to 1.2%. If duration of rest before micro series of loads reached 1 minute, quantity of mistakes reached 2.7% with pulse 180-190 b.p.m. (see fig. 2).



Fig. 2. Dynamic of mistakes depending on alternation of loads and rest of qualified handball players

Especially it was noticeable, when constant game time trouble happens in important official championships requires increased physical and psychic functioning of organism, instant thinking and extreme quickness of movements. It is quite reasonable that with working out of model micro-cycles it is necessary to consider exactly orientation of means.

Considering specificities of handball competition activity, for training of speed-power qualities and special endurance we used interval and continuous methods of training. Principle of selection of means was based on method of combined influence, owing to which we improved sportsmanship, maintained special workability and functional fitness of players at optimal level.

From our point of view, for complex solution of the tasks the best suitable is such rather popular among specialists of functional and physical training innovation as TRX®- training. Owing to using of simulator TRX® in complex with individual sensors of heart beats rate, command Polar Team – 2 for team and (in particular) game kinds of sports, we could work out complexes of specialized exercises, which, on the one hand simulated competition functioning and, on the other hand, in accentuated way influenced just on individual defects of players. Besides, we could provide objective prompt control over players' functional state, having possibility to urgently correct the process in real-time mode.

TRX® simulators facilitate development of all muscles, combining in one integrity: balance, mobility and flexibility – all that is required by handball players. Training with own weight excludes axial load on backbone; that is why simulator TRX® is of special interest for all, who feel increased loads on supporting motor system.

Basing on data of operative control of complex scientific-methodic team during first micro-cycle we developed organism's anaerobic potentials; in second - aerobic potentials. Obtaining of data was carried out in complex way by the following parameters: level of special physical fitness, level of physical workability; effectiveness of competition functioning; strong and weak sides of certain player and team in the whole; recommendations on corrections of training process. This process took place in the frames of micro cycles of different orientation (see fig. 3). During control trainings, fulfillment of TTA was completely in strict mode of future matches. Control-model trainings were with higher imitation of competition's conditions. Advanced trainings were conducted with significantly excessive scope and intensity. Advanced – model trainings were maximally approximated to matches and simulated conditions and confusing factors, which exceeded predicted reality.

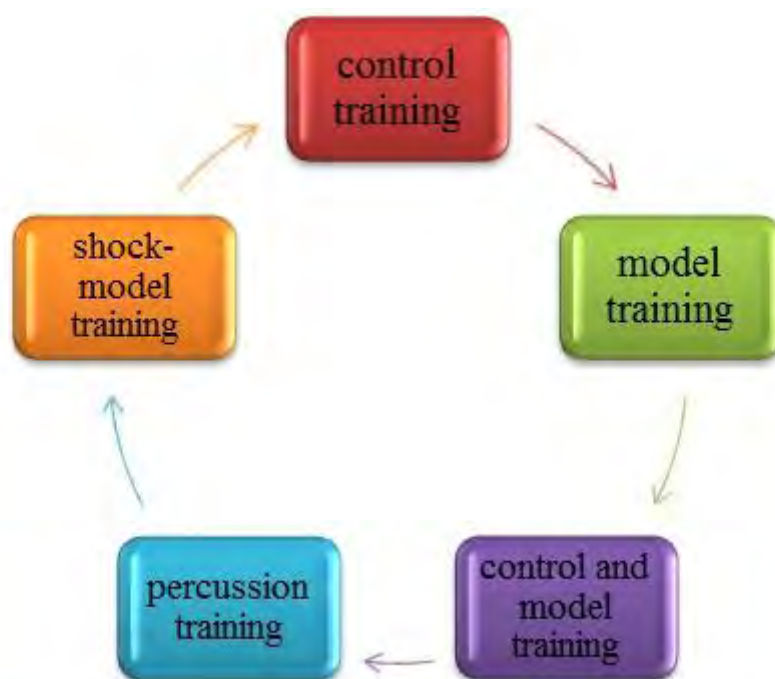


Fig. 3. Model micro cycles of inter-tour competition period

First type of training (development of anaerobic qualities) contained individual complexes of exercises, which sportsmen fulfilled in series by 15 – 20 repetitions. At the beginning we offered to fulfill 2-3 starts, than 3-4 and up to 5. Orientation of these complexes was targeted influence on main muscular groups, imitation of different elements of individual technical tactic actions. At trainings, pointed on development of special quickness with the help of technical-tactic exercises, duration of series reduced by the end of training in the following variants: 20, 17, 15, 12, 10 repetitions during 15-20 minutes. Rest pauses between them were 3-5 minutes – the time, which is required for HBR to reduce to 110-120 b.p.m. after loads. Rest pauses were filled with imitational exercises, oriented on improvement of ball handling. Depending on individual condition of a player we used 3 levels of load's complexity: 1st – gentle level, 2nd – main level and 3rd – mode of excessive loads for creation of optimal excessiveness.

The second type of training (development of aerobic potentials) was oriented on improvement of technical-tactic actions with maintaining of available level of aerobic potentials' functioning or development. In this type we used circular method of training's constructing. One more innovation was opportunity to change temp and rhythm of tasks' fulfillment with the help of specially created musical accompaniment, which we could vary in compliance with complexity of task from 120 to 160 accents per minute. It, in its turn, permitted to completely simulate game rhythm of competition functioning of handball players.

Schema of exercises' alternation (sequence of passing of circle) was the following: exercise for shoulder girdle muscles – exercise for lower limb muscles, - exercise for abdomen muscles, back and torso. Intervals of work with every kind first were equal to rest intervals and were 30-40 sec. that, in matches, corresponds to segments of high intensity and quick change of game situations. Then intervals changed to longer ones, 60 sec. every. And at last, we passed to fulfillment of exercises in mode: 60 sec. work – 30 sec. rest. Rest meant transition from “station” to taking initial position of next exercise. Quantity of “stations” (depending on quantity of players on site and bench players) – was 12-14.

Method of changing of intensity of exercises' fulfillment was used, like in previous training variant, with the help of calculated temp of musical accompaniment. Under such conditions, rest pauses between training circles were absent. The main condition of continuation of exercises' fulfillment was signal of cardio leader by data of HBR sensors, which shall have not reduced more than the lowest pulse frequency. It permitted to maintain constant cardio loading for long time within the set limits, thus, influencing on improvement of players' functional state.

Physiological specificity of trainings in model micro-cycles was that every following series of exercises repeated at the end of phase of quick HBR reducing (at level of 125–135 b.p.m.), which happened after finishing of previous load and matched with it by period of restoration of muscular workability's indicators.

Conclusions

Quantitative and qualitative analysis of results of complex determination of fitness in conditions of model micro-cycles after first stage of experimental research in comparison with initial data witnesses about increasing of special physical fitness, psycho-physiological indicators, and physical workability. Only for 2 weeks after beginning of break in regular championship (recreational and preparatory micro-cycles) handball players – participants of experimental program demonstrated significant increment of results in control exercises for speed endurance (12.8 %, $p < 0.01$), quickness (6.2%, $p < 0.05$), quickness of processing of visual information (7.3%, $p < 0.05$), response to moving object (12.3%, $p < 0.01$), distribution and concentration of attention (13.1%, $p < 0.01$).

The received results of handball players' functional fitness permitted for, on the base of pedagogic experiment, to ground application of replacements in conditions of competitions. The most optimal and effective indicators were, in our opinion: quantity of replacements in one match - 8-12 times; time of players being on site – 12-15 minutes; optimal rest time of players during replacement – 3-5 minutes; HBR after rest – 100-120 b.p.m.

The prospects of further researches imply experimental testing of effectiveness of developed model micro-cycles between tours of competition period in annual macro-cycle.

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