Assessment of sports talent children basis of individual typological approach

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Abstract

Objective of the study was to develop and scientifically substantiate a model for assessing sports talent during sports orientation and selection based on an individual typological approach.

Methods and structure of the study. The scientific experiment was carried out on the basis of the Center for testing, selection and support of sports gifted children of the Lesgaft National State University of Physical Education, Sports and Health, St. Petersburg. In the course of the study, a comprehensive assessment of general and special sports predisposition was used, consisting of genetic, morphofunctional, psychological and motor criteria.

Results and conclusions. A model for assessing sports talent during sports orientation and selection based on an individual typological approach has been developed, which includes three main blocks: medical and biological, psychological and sports and pedagogical. The model was tested on various contingents of the examined - children of preschool and school age and athletes. The results of its experimental verification confirmed the effectiveness of this approach to assessing sports abilities and their originality.

Keywords: *sports orientation, sports selection, sports talent, typology of sports abilities.*

Introduction. The steady growth of sports achievements in many sports increases the material costs of society for the training of highly qualified athletes, the effectiveness of which depends on the mass inclusion and selection of the most gifted children. Until now, there is a large dropout of those involved in sports sections and schools. Most often, leaving sports is a consequence of shortcomings made in assessing and predicting the sports predisposition of children.

The Concept for the preparation of a sports reserve in the Russian Federation until 2025 contains a very important section “Improving the system for selecting sports gifted children based on federal standards” [5]. At the same time, existing regulatory documents contradict scientific data on how to conduct selection. Now there are two main views on the assessment of abilities in sports orientation and selection. Some authors immediately recommend assessing abilities for a particular sport [6]. Others believe that it is necessary to start work with the selection of motor-gifted children [2, 4, 8, 9]. This approach serves as a guarantee against mistakes in the choice of sports specialization and avoids dropping out of children at the stage of introduction to sports.

So, T.S. Timakova points out that when recognizing the predisposition of children to engage in a certain sport, it is important to pay attention to the study of the athlete’s typology in the context of their individual characteristics [7]. V.B. Issurin, when recognizing sports talent, suggests focusing on the criteria for predisposition to a number of sports, such as water endurance sports, team and pair sports, martial arts, and others [3].

It is quite obvious that there is a need for a technology for typifying sports abilities when choosing a sports specialization, which would take into account the typological features of the child’s personality and their impact on psychophysical development.

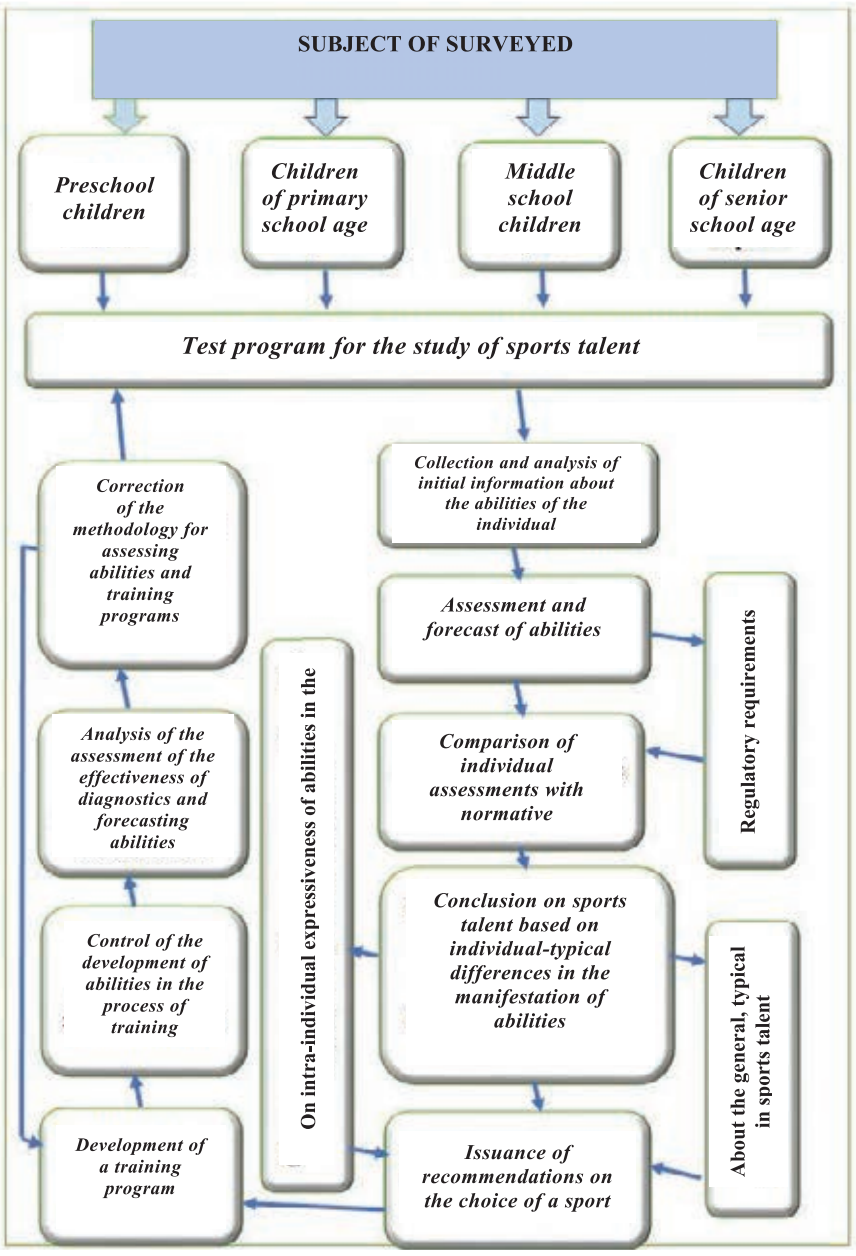
Objective of the study was to develop and scientifically substantiate a model for assessing sports tal-

ent during sports orientation and selection based on an individual typological approach.

Methods and structure of the study. To achieve this goal, a set of research methods was used: theoretical analysis and generalization of scientific and methodological literature, anthropometry, functional, psychological and pedagogical testing, DNA typing. Scientific work was carried out on the basis of the Center for testing, selection and support of sports gifted children of Lesgaft National State University of Physical Education, Sports and Health, St. Petersburg.

Results of the study and their discussion. The figure shows a structural-functional model for diagnosing the sports predisposition of children with sports orientation and selection, based on the consideration of typical and individual differences in the manifestation of individual abilities. The test program includes three main blocks: medical-biological, psychological, and sports-pedagogical [9].

The biomedical block included: measuring biological age, total body size, body proportions, assessing the type of physical development, predicting body length, assessing the functional state of the respiratory system using Stange, Genchi tests, spirometry; assessment of physical performance based on the determination of PWC170 using a bicycle ergometer, measurement of hand strength and back strength; as-



Structural-functional model for diagnosing and predicting the sports predisposition of children during orientation and selection

Conclusion based on the results of the survey of the potential opportunities of I-va S. (age 7 years)

Components of sports abilities and characteristics of sports opportunities
Genetic. The ratio of types: muscle fibers 60% - fast / 40% - slow. Has a tendency to anaerobic load. Low propensity to traumatism of bones, tendons and cartilages, medium - to traumatism of ligaments. Good tendency to regenerate bone tissue, average - ligaments. Good propensity for the manifestation of strength, very high - quick strength. Medium - to the manifestation of endurance, high - muscle endurance. High propensity to display kinetic and passive static flexibility, medium - active static. The average tendency of muscle tissue to hypertrophy. Good intermuscular coordination. High speed of passage of nerve impulses and speed of recovery of muscle tissue. Low propensity to gain and lose weight. The influence of fats on weight gain is average, carbohydrates are reduced. Increased fluid retention in the body.
Body features. Height forecast: 181.1-185.5 cm. Physical development: Macrosomatic type - disharmonious. The length of the thigh prevails over the length of the lower leg.
Psychological. Psychomotor sphere: high speed of sensorimotor reaction; very low accuracy in the selection reaction and medium accuracy in the reaction to a moving object; the predominance of the inhibitory process in combination with low psychomotor control and improvement in the quality of the balance function in difficult conditions, which can be considered as a resource. Approximately medium-weak type of nervous system. The predominance of the «trio» of motives of self-affirmation / effective motives, motives and motives of the team and procedural motives.
Motor. Above age norms in the results of tests for coordination. Within normal limits, the results of tests for speed, strength and speed-strength abilities, balance and flexibility.
Functional. Spirometry indicators (VC) are much higher than the age norm. Higher than normal indicators of hypoxemic test on inhalation and exhalation - a high ability to overcome the desire to resume breathing with the accumulation of decay products in the blood.

sessment of the genetic predisposition of the organism of the examined for sports profiling and individualization of the training process. Buccal epithelium was used as a material for genetic research.

The psychological block included an assessment of the psychomotor, cognitive and motivational spheres (according to a stabilographic test, a reaction to a moving object (RMO), a dosed tapping test, a corrective Bourdon test, a Wexlerr subtest ("Cryphering" and "Labyrinth", "Repetition of numbers"). With their help, vestibular stability, reaction speed, type of nervous system, hand-eye coordination, indicators of attention and operative memory, and the degree of severity of sports activity motives were determined.

The sports and pedagogical block included a list of tests to measure basic physical abilities.

Based on the results of the survey for each block, a step-by-step comparison of individual indicators with normative (model) characteristics is carried out, which are recommended to be used as criteria for sports selection in various sports. Depending on the genetic predisposition and the degree of manifestation in the manifestation of morphological, functional, psychological qualities, motor abilities, a conclusion is made about the predominant type of the child's sports talent - power, speed, speed-strength, coordination, etc., and a conclusion is made about the predisposition of each child for practicing a particular sport (see table).

An important component of the model is the support of sports gifted children. For a more accurate definition of sports specialization, it is desirable to offer a program of training sessions for a particular sport. In the course of practicing this sport, the correctness of the diagnosis made about sports abilities is checked and, if necessary, the children are reoriented to other sports that are more suitable for them.

In order to effectively diagnose and predict children's sports capabilities when choosing a subject of sports specialization, taking into account one or another type of giftedness, it is necessary to create automated control systems at regional, municipal centers for sports orientation and selection and sports training centers for sports teams.

Conclusions. Accounting for the types of giftedness makes it possible to more adequately determine sports specialization in accordance with the type of sports talent. Developed and tested at the Center for Sports Selection and Support of Sports Gifted Children of Lesgaft National State University of Physical Education, Sports and Health model of sports talent based on an individual typological approach using genetic, morphofunctional, psychological and motor criteria allows a child to choose the kind of sport that best suits his desires, predispositions and abilities.

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