Assessment of professionally-applied physical fitness of young men with mild intellectual impairments

UDC 376.42

A.V. Kashina[1]
PhD, Associate Professor **T.V. Fendel**[1]
[1]Tchaikovsky State Academy of Physical Culture and Sports, Tchaikovsky

Corresponding author: alenak_ch@inbox.ru

Abstract

Objective of the study was to evaluate the professional-applied physical fitness of young men with mild intellectual disabilities.

Methods and structure of the study. The experiment involved 174 young men with mild intellectual disabilities, graduating from the 9th grade of special (correctional) schools in the Perm Territory. Assessment of professionally applied physical fitness was carried out using the method of control tests. The list of tests was determined in accordance with the work program for adaptive physical education, developed on the basis of the requirements of the Federal State Educational Standard for the education of students with intellectual disabilities.

Results and conclusions. The most significant physical qualities for young men with mild intellectual disabilities, which determine the success of their professional activities, include: strength endurance and coordination abilities. The formation of these physical qualities will be facilitated by the methodology of professionally applied physical training, based on the use of exercises with BOSU and Super Pump simulators.

Keywords: *adaptive physical education, intellectual disorders, professionally applied physical training, strength endurance, coordination abilities.*

Introduction. Professional and applied training of students with mild intellectual disabilities, carried out in special (correctional) schools, plays a very important role in their further successful socialization, introduction to work, preparation for independent life, opening up opportunities for obtaining a profession and employment [1, 6]. It involves complex long-term work, in which teachers, employers and invited representatives of various professions take part [2, 6]. Obtaining general labor skills and abilities enables students to plan their activities, control and regulate the process of its implementation, which will be useful in any profession in the future [2, 3].

More than 80% of professions recommended for people with mild intellectual disabilities are associated with high physical activity, which leads to high requirements for their level of physical fitness [2, 4, 5].

At the same time, researchers point to the insufficient volume of professionally applied physical training, provided for by the main professional educational program and adaptive physical education programs in special (correctional) schools, especially in high school [1, 5, 6]. These facts determined the direction of our research.

Objective of the study was to evaluate the professional-applied physical fitness of young men with mild intellectual disabilities.

Methods and structure of the study. In the course of the study, methods of analysis and generalization of data from scientific and methodological literature, the method of professiography were used. With the help of the method of control tests, the assessment of professional-applied physical fitness of young men with mild intellectual impairment was carried out (174 students graduating from the 9th grade

of special (correctional) schools in the Perm Territory).

Results of the study and their discussion. The study of professional standards and requirements of professions recommended for persons with mild intellectual disabilities made it possible to identify the most important professional qualities, including physical ones, which are necessary for their successful implementation (Table 1).

The conducted research made it possible to determine that the most significant physical qualities for people with mild intellectual disabilities, which determine the success of their professional activities, include: strength endurance and coordination abilities.

174 young men with mild intellectual disabilities, graduating from the 9th grade of special (correctional) schools of the Perm Territory, took part in the study on the assessment of professionally applied physical fitness. Assessment of professionally applied physical fitness was carried out using the method of control tests. The list of tests was determined in accordance with the work program for adaptive physical education, developed on the basis of the requirements of the Federal State Educational Standard for the education of students with intellectual disabilities.

The results of the study are presented in table. 2.

When analyzing the results, we noticed that in two control tests ("Romberg's test" and "Tempo-rhythmic assessment"), young men with mild intellectual disabilities could not even reach the standard value.

In all other control tests, the average values are close to the lower limit of the normative range, which indicates an insufficient level of professional-applied physical fitness of young men with mild intellectual disabilities, graduating from the 9th grade of special (correctional) schools in the Perm Territory.

The study made it possible to reveal the existing contradiction between the low level of professional-applied physical fitness of young men with mild intellectual disabilities and the requirements for the level of development of professionally important physical qualities (primarily coordination abilities and strength endurance) imposed on workers in professions recommended for persons with mild intellectual disability.

To overcome this contradiction, in our opinion, the technique of professionally applied physical training of young men with mild intellectual disabilities, aimed at the formation of their coordination abilities and strength endurance, can contribute.

As a means of the methodology, we propose to include exercises with the BOSU simulator and exercises performed on the coordination ladder for the development of coordination abilities, and Super Pump exercises for the development of strength endurance.

Table 1. *Requirements of professions recommended for persons with mild intellectual disabilities*

Content of work	Must know	Must be able	Professionally important qualities
Painter			
Preparing surfaces for plaster, applying solutions to the wall surface and leveling plaster, surface finishing, etc.	Types and properties of solutions, technology and methods of plastering; quality requirements, etc.	Prepare mortars for plastering, prepare surfaces for plastering, work with special tool.	Developed vestibular apparatus, good eye, good vision with correct color perception, high level of strength endurance and coordination abilities
Gardener. landscaper. Green farm worker. Vegetable grower			
Improvement and gardening of lawns, squares, parks, plant care, cultivation of cultivated plants, vegetables and fruits	The structure of cultivated plants of vegetables and fruits, their types and varieties, conditions for their cultivation and reproduction, rules for planning and designing a garden, procedures for preparing soil for sowing and planting	Prepare the soil, cultivate crops, vegetables and fruits, care for and prevent diseases, work with garden tools, mow lawns, trees, pick up vegetable seeds, care for the crop and harvest it	Visual-figurative thinking, aesthetic taste, developed function of visual perception, high level of strength endurance and coordination abilities
Bricklayer			
Laying and repair of stone structures of buildings, bridges, industrial and hydraulic structures	Properties of mortars, waterproofing materials, masonry systems and joint dressing, methods of laying bricks	Produce and disassemble various types of masonry, repair brick walls and foundations, read construction drawings, make sketches	Developed vestibular apparatus, emotional stability, good hearing and eye, accuracy, high level of strength endurance and coordination abilities

Table 2. *The results of control tests to assess the professional-applied physical fitness of young men with mild intellectual disabilities (n = 174)*

Control test	$\bar{X}$	Standard value
Raising the body from a supine position for 1 min, number of times	29,28±3,15	28–40
Flexion extension of arms in an emphasis lying, number of times	18,92±2,75	23–32
Keeping the trunk at an angle of 45^0 from a prone position, with	56,72±5,11	60–90
Keeping the body at an angle of 45^0 from a supine position, with	36,96±4,64	40–60
Romberg's test, s	11,56±2,73	50 и более
Shuttle run, s	9,28±0,63	8–9
Tempo-rhythmic assessment, points	3,8±0,76	5–7

In doing so, we recommend that you adhere to the following logic of their application:

– When working with the BOSU simulator at the initial stages, pay great attention to the ability to maintain a safe, stable starting position; first apply simple exercises without objects; as you master them, increase the coordination complexity of the exercises and add exercises with objects, and then proceed to performing exercises on an inverted simulator (on its flat base).

– It is recommended to start working with the coordination ladder with varieties of steps, performing them while maintaining a distance of three to four cells; gradually increasing the pace, while achieving a decrease in the number of errors, move on to running steps (the general requirement is not to step on the rungs of the stairs); after mastering them, include turns and exercises without visual coordination (with eyes closed).

Strength-oriented exercises (Super Pump) are recommended to be carried out to musical accompaniment with various equipment (barbell bar, dumbbells, disks) or your own weight; between music tracks it is recommended to arrange a rest lasting 1-2 minutes.

C**onclusions.** The most significant physical qualities for young men with mild intellectual disabilities, which determine the success of their professional activities, include: strength endurance and coordination abilities. The formation of these physical qualities will be facilitated by the methodology of professionally applied physical training, based on the use of exercises with BOSU and Super Pump simulators.

References

1. Ermakov S.N. Professionalno-orientirovannaya fizicheskaya podgotovka uchashchihsya specialnyh (korrekcionnyh) shkol VIII vida [Professionally-oriented physical training of students of special (correctional) schools of the VIII type]. PhD diss. abstrakt. Khabarovsk. 2005. 28 p.
2. Vasyanina I.I. Organizaciya i soderzhanie fizkulturno-ozdorovitel'nogo napravleniya vneurochnoj deyatelnosti po fizicheskoj kulture uchashchihsya s legkoj umstvennoj otstalostyu [Organization and content of the physical culture and health-improving direction of extracurricular activities in physical culture of students with mild mental retardation]. PhD diss.. Vladivostok. 2016. 196 p.
3. Zach G.G. Profilnaya trudovaya podgotovka obuchayushchihsya s umstvennoj otstalost'yu: istoriya, sovremennost, perspektivy [Profile labor training of students with mental retardation: history, modernity, prospects]. Specialnoe obrazovanie. 2020. No. 2. pp. 42-50.
4. Kaplanskaya E.I., Galle A.G., Golovin G.A. Professionalnaya orientaciya detej invalidov v sootvetstvii s potrebnostyami rynka truda [Vocational guidance for children with disabilities in accordance with the needs of the labor market]. Teaching aid for a teacher of special (correctional) educational institutions for the vocational guidance of children with disabilities in accordance with the needs of the labor market. Moscow: Nauchno-metodicheskij centr obrazovaniya, vospitaniya i socialnoj zashchity publ., 2010. 72 p.
5. Kashina A.V., Maltseva I.S. Professionalno-orientirovannyj podhod v fizicheskom vospitanii obuchayushchihsya s legkoj stepenyu narusheniya intellekta [Vocational-oriented approach in physical education of students with mild intellectual impairment]. Pedagogiko-psihologicheskie i mediko-biologicheskie problemy fizicheskoj kultury i sporta [Pedagogical-psychological and medical-biological problems of physical culture and sports]. Rossijskij zhurnal fizicheskogo vospitaniya i sporta. 2021. Vol. 16. No. 3. pp. 80-84.
6. Starobina E.M. [ed.] Professionalnaya orientaciya, professionalnaya podgotovka i trudoustrojstvo pri umstvennoj otstalosti [Vocational orientation, vocational training and employment with mental retardation]. Study guide. Moscow: FORUM: INFRA-M publ., 2007. 304 p.