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INDIVIDUALIZATION AND DIFFERENTIATION IN THE PROCESS OF PHYSICAL AND HEALTH-IMPROVING SHAPING ACTIVITIES WITH WOMEN OF MATURE AGE

The purpose of the study: theoretical and experimental substantiation of individual-differentiated approach in the process of physical culture and health training shaping with women of mature age. Research methods: theoretical analysis and generalization of scientific and methodological literature, questionnaire survey, anthropometric measurements, somatotyping (by the method of M. V. Chernorutsky), control and pedagogical tests, a complex of medical and biological methods, pedagogical observation, pedagogical experiment, methods of mathematical statistics. The results of the study revealed somatotopically distinctive features of the physical development component of body composition, functional status, physical fitness and motivational needs of women of 21–35 years old who are involved in shaping.

***Key words**: individually differentiated approach, female body, mature age, somatotype, ovarian-menstrual cycle, healing process, shaping, physical condition.*

Introduction. Modern stage of development of physical culture and health-improving activity is characterized by qualitative substantial changes and new organizational and pedagogical approaches. Progressive forms, means, methods and implementation of effective methods in practice will require significant updates of methodological support of mass sports and recreation movement. (Венгерова, 2011; Скидан и Врублевский, 2018). One of the main requirements of the modern organization of the sports and recreational process is to provide an individual and differentiated approach to the students (Савин и др., 2017, с. 13).

The problem of scientific substantiation of the individually differentiated approach and lack of modern systematic information about the adaptive reactions of the organism of women of mature age to physical activity served as the basis for the search for significant criteria of individualization and differentiation, engaged in the shaping system (Ершкова, 2015; Мамылина и Бобылева, 2016).

Group form is one of the most popular at the moment in the way of organizing and conducting classes in the field of physical education and health services for the female contingent (Венгерова, 2011; Скидан и Врублевский, 2018). In real life, group classes have both significant advantages and significant disadvantages. Analysis of scientific and methodological literature (Венгерова, 2011; Ершкова, 2015; Плаксина, 2008; Селуянов, 2009) and practical activity allowed to reveal very inconsistent opinions of experts in the field of improving physical culture about a technique of the group (homogeneous and heterogeneous) organization of improving trainings for women of mature age.

Today, the principle of variability is proclaimed, which allows specialists in the field of physical culture to choose and design the pedagogical process according to the attractiveness and effectiveness of training programs for women, taking into account their interests, needs, age characteristics, level of the initial physical and functional state (Мамылина и Бобылева, 2016; Скидан и Врублевский, 2018; Skidan et al., Sevdalev 2015). The factor of health today is oriented towards a personality-centered approach, which includes individualization and differentiation of physical culture and health process.

It should be noted that differentiated approach in health training of women of mature age is not always targeted at facilitating physical activity. There are cases when a need to increase the amount of load and its intensity occurs. It is always necessary to remember that differentiated approach does not imply quantitative changes in physical activity, but qualitative organization of sports and recreational activities in order to create the possibility of targeted impact according to the objectives and ultimate goal.

Analysis of relevant research. In the process of the women's recovery, the leading role was taken by the modern form of health-improving physical culture – fitness. The variety of types of motor activity in the dynamically developing fitness industry are targeted at the desire to meet various sports and recreational interests of contemporaries (Венгерова, 2011; Плаксина, 2008).

Recently, in the field of fitness a truly huge selection of opportunities has been provided. Modern fashion and media dictate, regardless of age, the ideal of a beautiful and athletic body (Ершкова, 2015, с. 19). On the one hand, there is a focus on maintaining a healthy lifestyle, which significantly improves the quality of life and its duration, on the other hand, the diametrically opposite situation. The unrestrained desire of women to acquire a beautiful body is the cause of the violation to their health, the external physical beauty comes to the fore, which levels the internal individual characteristics (Савин и др., 2017, с. 21).

Medical workers, psychologists and sociologists noted new diseases of modern society, which arose under the influence of forced imposed ideas about the beauty of the female body (Мамылина и Бобылева, 2016; Павлова, 2008; Семенова, 2004).

Fitness as a social phenomenon brings together women of all ages, levels of health and physical fitness, which indicates the need for a deeper theoretical and experimental study of different types of fitness for the mature contingent involved (Мартиросов и др., 2010; Плаксина, 2008; Селуянов, 2009; Савин и др., 2017; Skidan et al., 2015). Moreover, the issues of planning training process of mature women in the field of fitness are quite complex.

Data of scientific and methodological literature (Венгерова, 2011; Мамылина и Бобылева, 2016) and the results of our own research (Скидан и Врублевский, 2018; Kostyuchenko et al., 2018; Skidan et al., 2015; Skidan & Vrublevskiy, 2017) have shown that modern shaping system has great potential in solving a variety of health problems related to the age and social status of women involved, their needs and physical condition. Today, shaping is detailed in its practical activities, including experimental forms. Harmoniously developed functional body is a modern ideal of shaping. At the same time, inner, outer beauty and harmony is the key to the formation of a mature personality.

Thus, as it has been stated above, the problem of finding effective approaches of improving women's health in the process of health training, taking into account individual characteristics and differentiation of physical activity, as well as in accordance with the adaptive capabilities of the body involved, remains relevant.

The purpose of the study: theoretical and experimental substantiation of individual-differentiated approach in the process of physical culture and health training shaping with women of mature age.

Research methods: theoretical analysis and generalization of scientific and methodological literature, questionnaire survey, anthropometric measurements, somatotyping (by the method of M. V. Chernorutsky) (Павлова, 2008, с. 18), control and pedagogical tests, a complex of medical and biological methods, pedagogical observation, pedagogical experiment, methods of mathematical statistics.

The study was conducted on the basis of the research laboratory of modern health and recreational technologies at the Gomel State University named after F. Skorina. The study involved 48 women of mature age. In the process of a search experiment, a comprehensive diagnosis of the physical condition (physical development, body composition, functional state, physical

fitness) of 21–35 years old women, who wanted to do shaping, was carried out. In addition to the measurement procedures, a questionnaire survey was conducted to examinees in order to identify the priority motives of the physical training and health activities of this sample set.

The results of the study and their discussion. In physical culture and health practice, a significant criterion of differentiation are constitutional features, in particular somatotype associated with functional characteristics of the cardiorespiratory and nervous system, organization of metabolism, motor capabilities (Додонова, 2006; Мартиросов и др., 2010). Somatotypological procedure has allowed to divide students according to three somatotypes: asthenic (A) – 29,2 % (n=14), normosthenic (N) – 37,5 % (n=18), hypersthenic (H) – 33,3 % (n=16).

The analysis of the initial level of physical development of the subjects revealed the distinctive features of morphological parameters of different somatotypes (table 1). Representatives of asthenic somatotype have the lowest values of weight-growth index, circumference body size, vital capacity of the lungs (lung capacity), carpal dynamometry. Hypersthenics are characterized by the highest values of the studied indicators, the intermediate position is occupied by persons of the normosthenic somatotype. The differences are statistically significant ($p<0,05$).

When comparing the physical development indicators of the subjects with the standard values, it has been established that asthenic women have a Ketle weight-growth index characterizing the body weight deficit by 2,68 %, among normosthenic individuals, on the contrary, this indicator is higher than the norm by 7.96 %, in hypersthenic representatives noted a maximum excess of 13,91 %, which indicates overweight.

As a result of analysis of indicators of the circumferences of the main parts of the body (wrist, chest, waist, buttocks, thigh, shin), low values of girth dimensions are observed in asthenic type, average girth values characterize women of normosthenic type, high values of this indicator are recorded in hypersthenic persons.

The vital capacity of the lungs, which assesses the level of development of external respiration, is lower in asthenic individuals by 14,37 % compared to the proper level (according to the Ludwig formula), while in normosthenic and hypersthenic women there is a decrease of 9,08 % and 12,29 %.

Table 1

The difference of the initial indicators of the morpho-functional state of women of 21-35 years old of different somatotypes

Indicators	Difference between groups A- and N-type			Difference between groups N- and H-type			Difference between groups A- and H-type		
	unit	%	p	unit	%	p	unit	%	p
Ketle index (g/cm)	61,6	19,46	<0,05	49,3	13,04	<0,05	110,9	35,05	<0,05
Wrist girth (cm)	2,6	19,69	<0,05	1,8	11,39	<0,05	4,4	33,33	<0,05
Chest girth (cm)	7,4	9,33	<0,05	2,4	2,76	<0,05	9,8	12,35	<0,05
Waist girth (cm)	8,3	12,36	<0,05	7,1	9,41	<0,05	15,4	22,95	<0,05
Buttock girth (cm)	5,8	6,49	<0,05	5,0	5,25	<0,05	-10,8	12,08	<0,05
Hip girth (cm)	4,2	8,30	<0,05	5,2	9,48	<0,05	9,4	18,57	<0,05
Calf girth (cm)	1,9	5,88	<0,05	1,1	3,21	<0,05	3,0	9,28	<0,05
Vital Capacity of the Lung (ml)	128,5	4,33	<0,05	49,4	1,59	<0,05	177,9	6,00	<0,05
Heart rate at rest (beats / min)	1,7	2,28	>0,05	7,4	9,71	<0,05	9,1	12,21	<0,05
Blood pressure systolic	10,2	8,78	<0,05	11,9	9,42	<0,05	22,1	19,03	<0,05
Blood pressure diastolic	4,5	5,89	<0,05	5,3	6,55	<0,05	9,8	12,82	<0,05
Test Stange (sec)	5,4	14,83	<0,05	-4,5	10,78	<0,05	0,9	2,47	>0,05
Gencha's test (sec)	0,5	2,21	>0,05	3,7	16,01	<0,05	4,2	18,58	<0,05
Sample Rufe (point)	-4,3	33,33	<0,05	0,3	3,48	>0,05	-4,0	31,00	<0,05
Wrist dynamometry (kg)	4,6	20,81	<0,05	1,8	6,74	>0,05	6,4	28,95	<0,05
Fat component (%)	7,7	46,95	<0,05	5,1	21,16	<0,05	12,8	78,04	<0,05
Muscle component (%)	5,5	18,77	<0,05	6,6	18,96	<0,05	12,1	41,29	<0,05

Note: A – asthenic type; N – normostenic type; H – hypersthenic type.

The strength of the hand muscles, in relation to body mass, in representatives of all somatotypes corresponds to a level below the average.

Indicators of body composition as a component characterizing physical development in different somatotypes differ, especially when comparing asthenics with hypersthenics.

Analysis of baseline body composition in representatives of different somatotype has revealed the following features. The percentage of fat component in the body of 21–35 years old women ranges from 16,4 % to 29,2 %, taking into account that the optimal level of this indicator is in the range from 18 to 24 % (Павлова, 2008 с. 99). Thus, women of asthenic type have a low indicator of the severity of the fat component, at the same time, normosthenic women are at the upper limit of optimal values and a significant

excess of the indicator is noted in hypersthenic women. The latter, under certain circumstances (as well as excess fat) can provoke development of metabolic syndrome, which will be a trigger to diseases.

Similar variability can be observed in the analysis of the muscle component in the subjects. The percentage of muscle component in the body of women ranges from 29,3 % to 41,4 %, based on the fact that normally this figure is 34–36 % (Савин и др., 2017, с. 123). Women of asthenic type are characterized by weak development of muscle mass, normosthenic persons have an average muscular development within the limits of optimal values, hypersthenic women have an increased content of muscle mass. Analyzing and comparing the functional state of the representatives of different somatotype we have revealed a similar trend with respect to the considered component of the physical state – physical development.

Considering the main indicators of the cardiovascular system – heart rate (HR) at rest and blood pressure of the subjects, it is noted that in people with asthenic type, there is more economical and productive functioning of this system compared to the other two somatotypes. Indicators of the respiratory system, assessed by the characteristics of the VC, Shtanga and Genchi tests indicate a higher oxygen supply of the body in people of the normosthenic type. The physical performance of women with asthenic type is predominantly satisfactory, with the normostenic and hypersthenic types is assessed as average. A comparative analysis of the indicators of physical fitness of the subjects has shown that, according to the results of physical tests, specific differences were observed among representatives of different somatotypes (Table 2).

It has been revealed that, in general, women of asthenic type have higher levels of coordination, speed and general endurance, low level of development of flexibility and strength abilities. In individuals of the normosthenic type, the average level of development of flexibility, static muscle strength of the hand, strength endurance of the abdominal muscles, arms and shoulder girdle, general endurance and low level of “explosive” muscle strength of the lower limbs, speed abilities and speed strength of the muscles of the arms and shoulder girdle. Hypersthenic women – above average flexibility, the average level of “explosive” muscle strength of the lower limbs and static hand strength, low level of coordination, speed, strength endurance of the abdominal muscles, muscles of the arms and shoulder girdle, speed abilities, speed and strength endurance.

Table 2

Difference of initial indicators of physical fitness of 21-35 years old women of various somatotypes

Indicators	Difference between groups A- and N-type			Difference between groups N- and H-type			Difference between groups A- and H-type		
	unit	%	p	unit	%	p	unit	%	p
The Balance of "Flamingo" (number of times)	0,8	28,57	>0,05	1,3	36,11	>0,05	2,1	75,0	>0,05
Speed of hand movements (s)	0,6	5,55	>0,05	3,5	30,70	<0,05	4,1	37,96	<0,05
Bending forward from a sitting position (cm)	2,4	39,34	<0,05	1,1	12,94	>0,05	3,5	57,37	<0,05
Long jump from a place (cm)	-13,8	9,06	<0,05	22,8	16,46	<0,05	9,0	5,90	<0,05
Wrist dynamometry (kg)	4,6	20,81	<0,05	1,8	6,74	>0,05	6,4	28,95	<0,05
Raising the body from supine position for 30 s (number of times)	5,0	39,37	<0,05	-1,3	7,34	>0,05	3,7	29,13	<0,05
Hang on the crossbar (s)	3,2	22,37	<0,05	-6,4	36,57	<0,05	-3,2	22,37	<0,05
Shuttle run 10x5 m (s)	1,4	5,88	>0,05	3,0	11,90	<0,05	4,4	18,48	<0,05
Bending and extending the arms in a rest, lying on your lap for 30s (the number of times)	5,3	50,96	<0,05	0,9	5,73	>0,05	6,2	59,61	<0,05
Run 1000 m (c)	23,3	6,68	<0,05	16,0	4,30	<0,05	39,3	12,28	<0,05

Note: A – asthenic type; N – normostenic type; H – hypersthenic type.

Thus, the results of physical fitness of the subjects reflect their morphological and functional features. So, asthenic faces are characterized by low body weight, low level of girth dimensions, deficiency of fat and muscle mass, which causes a low level of power abilities. In normal patients, optimal body weight, average level of girth dimensions, a sufficiently developed muscular component with a small proportion of excess fat mass, which causes, in general, an intermediate average level of development of physical abilities, which in the absence of sufficient physical activity is manifested by a decrease in speed and strength abilities. Hypersthenic individuals are characterized by

overweight, high level of girth dimensions, high content of fat and muscle mass. The latter causes a decrease in the efficiency of the cardiorespiratory system, a low level of general endurance, unsuitability for long-term uniform work, complexity of speed and coordination abilities.

The obtained information on the physical condition was supplemented with the results of the questioning of the subjects in order to identify the priority of the motives of physical training and health shaping (Fig. 1).

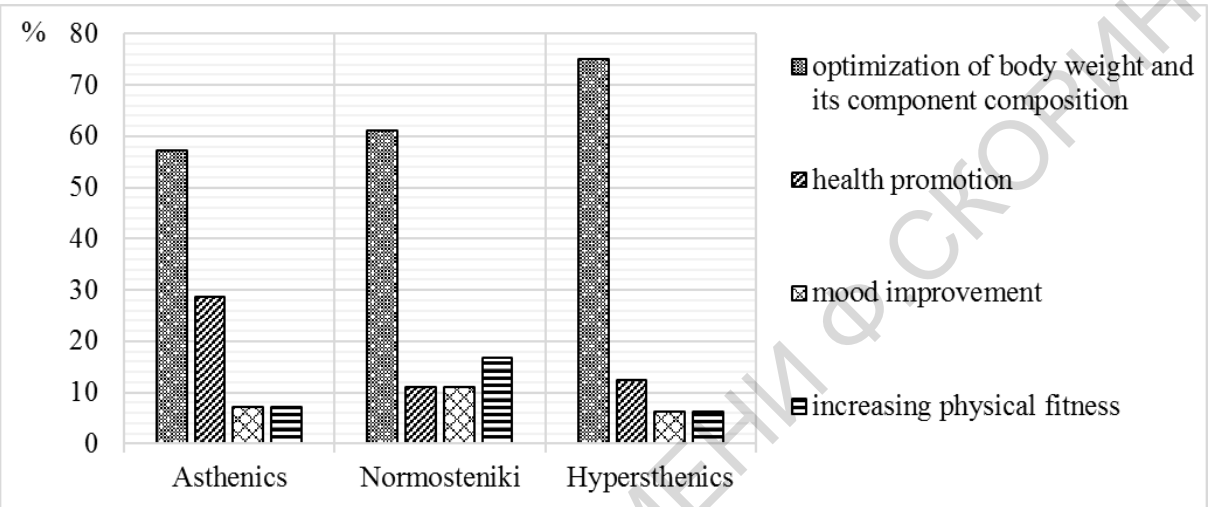

Fig. 1. Priority motives of physical training and health activities/shaping of 21-35 years old women of various somatotypes (%).

It has been revealed that the majority of respondents (64,6 %) are looking for optimization of body weight and body composition component (asthenic – 57,1 %, normosthenic – 61,1 %, hypersthenic – 75,0 %). The results indicate dominant position of morphological indicators among the internal motivations in relation to physical culture and health activities/shaping of 21-35 years old women of different somatotypes.

The results obtained in preliminary studies allowed us to substantiate a differentiated approach in the construction of methods of physical culture and recreational exercises in shaping for women of mature age. The differentiated orientation of the training shaping process was carried out, considering the identified specific features of the physical condition of women of various types of somatic constitution.

The peculiarity of the experimental methodology was development of three shaping programs of various target orientation of the impact for each selected somatotype.

Shaping program for women of **asthenic type** is targeted at increasing the girth size of individual parts of the body by increasing the muscle component. In shaping classes were included sets of exercises mainly of power

character, with an emphasis on the development of postural muscles – "muscle corset". Interval training method – a combination of five series of aerobic combinations (2–3 minutes) with performance of strength exercises (5–7 minutes). The work of the power orientation provided a consistent study of muscle groups (hip and shin, pelvic area, abdomen, back and shoulder girdle, chest and arms) combined complexes of multi-articular power static-dynamic exercises with a well-regulated technique.

At the heart of the shaping program for women of the **normosthenic type** is preservation of the existing level of physical condition due to an equivalent reduction in the fat component and a moderate increase in muscle. Shaping classes assumed complex (equivalent) work of aerobic (20 minutes) and power (20 minutes) character. Complexes of power static-dynamic shaping exercises provided an isolated study of each individual muscle group (*thigh*: front, back, inside, side; *buttocks*: medium, small, large; *abdomen*: top, bottom, *waist*; *back*: top, bottom; *chest; hands*) in a certain order with a distribution of load on all muscle groups.

In turn, the shaping program for women of **hypersthenic type** is targeted at reducing the girth size of individual parts of their body by reducing the fat component and maintaining muscle. In shaping classes were included sets of exercises mainly of aerobic nature. In the main part of shaping classes most of the time (30–35 minutes) is devoted to aerobic exercises, performing multi-articular strength exercises (10–15 minutes) to accelerate the metabolic profile. Complexes of combined strength exercises provided for the study of all muscle groups (thigh, buttocks, back, abdomen, chest, arms) by serial-repeated method.

The individual effect consisted in the distribution of the volume and intensity of loads depending on the hormonal background of the female body during the ovarian-menstrual cycle (OMC). When developing individual shaping programs, we were guided by the average duration of the OMC (28 days) and theoretical data (Kostyuchenko et al., 2018, p. 26) on the changes occurring in the woman's body, as well as indicators of physical performance.

The mesostructure of physical culture and health-improving activities/shaping considering phases of biorhythmics of an organism of women of mature age is presented in table 3.

In the course of the pedagogical experiment, 3 times a week for 60 minutes all women were engaged in accordance with the developed individually differentiated shaping programs, taking into account the type of somatic constitution and phase of the OMC. In the experiment, a nine-month macrocycle of physical training and health shaping classes was implemented (September-May).

Table 3

The mesostructure of physical education and fitness/shaping classes, considering the phases of biorhythmic organism of women of mature age

The type and duration of the microcycle	Phases of the OMC and their duration	Total training load	Motor mode
Regenerating 6–8 days	Premenstrual 3–4 days, Menstrual 3–5 days	small medium	50–60 % heart rate max
Developmental (catabolic) 7–9 days	Postmenstrual (estrogenic) 7–9 days	large	60–70 % heart rate max
Stabilizing 3–4 days	Ovulatory 3–4 days	medium	50–60 % heart rate max
Developmental (anabolic) 7–9 days	Postovulatory (progesterone) 7–9 days	large	70–80 % heart rate max

Evaluation of the effectiveness of the developed individually differentiated methodology for organizing physical education and fitness/shaping classes was determined by the dynamics and statistical reliability of the changes that occurred in indicators of physical development, body composition, functional state, and physical fitness of the group of students involved.

As a result of individually differentiated use of shaping programs, it was revealed that over the nine-month period of systematic occupations, women of 21–35 years old have experienced a number of positive changes ($p<0,05$) of almost all indicators of physical condition.

Analysis of the data obtained from the study of the physical development of the subjects indicates a statistically significant improvement ($p<0,05$) of indicators in comparison with the baseline. Thus, the maximum decrease in body weight is observed in persons of the hypersthenic type by 7,7 kg and the normosthenic type by 4,7 kg. At the same time, in women with asthenic type, this indicator increased by 2,3 kg. Owing to a decrease in body weight, the values of the Ketle index have significantly changed by 11,0 %, 7,5 % and 4,3 %, which indicates that physical development of normosthenic and asthenic women according to standard values is achieved. It should be noted that in hypersthenic individuals, there is a slight excess of this indicator above the norm by 1,3 %.

Organization of classes, considering the severity of the body composition of the subjects of various somatotypes, made it possible to obtain statistically significant ($p<0,05$) differences in the reduction of the fat

component in women of the hyperstenic type by 20,2 %, and of the normostenic type by 11,2 %. There is an increase in this indicator in asthenic women by 13,4 %, which indicates compliance with additional recommendations on nutrition.

The maximum increase in the muscular component was observed in the representatives of the asthenic type and was 18,4 % ($p<0,05$), in the normostenic type 8,0 % ($p<0,05$). Hypersthenic individuals did not have statistically significant ($p>0,05$) changes, since the main purpose of shaping exercises for this type of somatic constitution was to optimize the composition of the body by preferentially reducing the fat component and preserving the muscle one.

Analysis of measurements of girth dimensions indicates the effectiveness of the experimental method for the formation of a harmonious physique of women of various types of somatic constitution. Thus, girth indicators in women of hypersthenic type over the experiment period statistically significantly ($p<0,05$) decreased (chest girth by 3,3 %, waist girth by 5,7 %, buttock girth by 4,6 %, hip girth by 9,3 %). In women of the normosthenic type is slightly smaller in terms of the dynamics of a decrease in girths – chest – 2,2 %, waist – 4,2 %, buttocks – 2,4 %, thigh – 3,1 %. At the same time, the chest girth increased by 2,2 % ($p<0,05$). The representatives of the asthenic type have a statistically significant (for 5% significance level) reverse dynamics (increase) of the chest girth indicators by 3,3 %, breasts by 2,7 %, buttocks by 2,8 %, hips by 3,9 %, waist circumference shows a decrease of 2,8%, due to the pronounced formation of muscle mass in these parts of the body.

When comparing physiometric indicators, the most significant growth rates of hand dynamometry in women in each somatotype are noted. In the asthenic type, the increase was 47,5 %, in the normosthenic type – 29,2 %, in the hypersthenic type – 30,5 %.

The level of lung capacity in all somatotype groups statistically significantly ($p<0,05$) increased compared with baseline. The most pronounced changes in this indicator are in hypersthenic individuals (10,8 %), in normosthenic individuals – 8,2 %, and in asthenic individuals – 7,8 %.

Indicators of Shtange and Genchi's tests also statistically significantly ($p<0,05$) improved, the highest increase, respectively, was observed in asthenic women (14,2 % and 14,6 %), in hypersthenic individuals (13,8 % and 14,1 %), in normosthenic representatives (8,6 % and 11,7 %).

The decrease in overweight in women of hypersthenic and normosthenic type served as normalization of the functional parameters of the cardiovascular

system. Thus, the resting heart rate decreased by 12,1 % and 8,7 % ($p<0,05$), systolic blood pressure by 9,8 % and 5,6 % ($p<0,05$), diastolic by 6,7 % and 8,0 % ($p<0,05$), respectively.

The results of the Rufier test also confirm the effectiveness of the developed individually differentiated method of shaping for women. In all somatotypic groups, statistically significant ($p<0,05$) increased the level of general physical performance, reflecting economical functioning of the cardiovascular system (CVS). In representatives of the normosthenic type, the increase was 32,5 % – a good level of cardiac functional reserves, in women of the asthenic and hypersthenic types – 28,7 % and 28,1 %, respectively, an average level of adaptation to cardiovascular diseases was noted.

An analysis of the physical fitness indicators of the subjects as part of the experiment revealed statistically significant ($p<0,05$) improvements in a significant part of the indicators – “Flamingo balance”, speed of arm movement, leaning forward from a sitting position, a long jump from a seat, raising the body from supine positions for 30s, flexion and extension of the arms in a rest, lying on your knees for 30s, 1000 m run – in individuals of each somatotype. In the other indicators – hanging on a high crossbar on bent arms, shuttle running 10x5 m showed only positive dynamics ($p>0,05$).

Conclusions. As a result of the conducted pedagogical research, it was established that the morphological criterion – the somatotype is a significant and necessary condition for differentiation of the process of physical training and fitness/shaping with women of mature age. Distinctive somatotypical features of physical development, composition of the body, functional state, physical fitness and motivation of women aged 21–35 years have been revealed. The specific differentiated orientation of the training shaping effects for women of each somatotype has been determined.

An individually differentiated methodology was developed for organizing the process of physical education and recreational exercises with shaping for women of the first mature age on the basis of their somatic-type features and the phasic biorhythms of the female body. The organic combination of the constitutional features of women involved and the phase nature of their specific biological cycle contributes to the achievement of a higher cumulative effect of adaptation of the body to shaping effects, increasing the level of morphofunctional state and physical fitness. Individually differentiated approach allows managing the morphofunctional improvement of the body of women of mature age more purposefully, to achieve the optimal level of their physical fitness and to satisfy the motivational needs in the physical culture and shaping process.

The effectiveness of the individually-differentiated physical training and fitness/shaping classes is confirmed by a statistically significant ($p<0,05$) improvement in almost all the recorded indicators of physical, functional condition and physical fitness of women aged 21–35 years.

Prospects for further research is focused on studying the effect of individually differentiated methods of physical culture and fitness/shaping classes on the psycho-emotional state of women of mature age.

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РЕЗЮМЕ

Скидан Анна, Врублевский Евгений, Севдалева Ксения. Индивидуализация и дифференциация в процессе физкультурно-оздоровительных занятий шейпингом с женщинами зрелого возраста.

Цель исследования: теоретико-экспериментальное обоснование индивидуально-дифференцированного подхода в процессе физкультурно-оздоровительных занятий шейпингом с женщинами зрелого возраста. Методы исследования: теоретический анализ и обобщение научно-методической литературы, анкетный опрос, антропометрические измерения, соматотипирование (по методике М. В. Черноруцкого), контрольно-педагогические испытания, комплекс медико-биологических методов, педагогическое наблюдение, педагогический эксперимент, методы математической статистики. Результаты исследования: выявлены отличительные соматотипические особенности физического развития, компонентного состава тела, функционального состояния, физической подготовленности и мотивационных потребностей женщин 21–35 лет, желающих заниматься шейпингом.

Ключевые слова: *индивидуально-дифференцированный подход, женский организм, зрелый возраст, соматотип, овариально-менструальный цикл, процесс оздоровления, шейпинг, физическое состояние.*

АНОТАЦІЯ

Скидан Анна, Врублевський Євген, Севдалева Ксенія. Індивідуалізація і диференціація в процесі фізкультурно-оздоровчих занять шейпінгом з жінками зрілого віку.

Мета дослідження: теоретико-експериментальне обґрунтування індивідуально-диференційованого підходу в процесі фізкультурно-оздоровчих занять шейпінгом з жінками зрілого віку. Методи дослідження: теоретичний аналіз і узагальнення науково-методичної літератури, анкетне опитування, антропометричні вимірювання, розподіл за соматотипами (за методикою

М. В. Чернoруцкого), контрольно-педагогічні випробування, комплекс медико-біологічних методів, педагогічне спостереження, педагогічний експеримент, методи математичної статистики. Результати дослідження: виявлені характерні соматотипічні особливості фізичного розвитку, компонентного складу тіла, функціонального стану, фізичної підготовленості та мотиваційних потреб жінок 21–35 років, які бажають займатися шейпінгом.

Представниці астенічного типу відрізняються найменшими величинами показників ваго-ростового показника, розмірів тіла, життєвої ємності легень, кистьового динамометру, компонентного складу тіла. Особи гіперстенічного типу мають найбільші значення досліджуваних показників, проміжне положення займає нормостенічний соматотип. Відмінності статистично достовірні (p<0,05). При аналізі й зіставленні функціонального стану представниць різного соматотипу встановлена схожа тенденція щодо розглянутого компонента фізичного стану – фізичного розвитку. Оцінка вихідного рівня фізичного розвитку, функціонального стану й фізичної підготовленості жінок зрілого віку виявила відхилення від нормативних значень більшості зафіксованих показників. Визначено специфічну диференційовану спрямованість тренувальних шейпінг-впливів для жінок кожного соматотипу.

Розроблено індивідуально-диференційовану методику організації процесу фізкультурно-оздоровчих занять шейпінгом для жінок 21–35 років на основі врахування їх соматотипічних особливостей і фазності біоритміки жіночого організму. Установлено сприятливу динаміку і статистичну достовірність змін у показниках морфофункціонального стану й фізичної підготовленості досліджуваного контингенту в порівнянні з вихідними показниками.

Практичне значення одержаних результатів полягає в продуктивності індивідуально-диференційованої методики фізкультурно-оздоровчих занять шейпінгом, що підтверджується статистично достовірним (для 5 % рівня значущості) поліпшенням більшості реєстрованих показників фізичного, функціонального стану і фізичної підготовленості жінок у віці 21–35 років.

Перспективи подальших досліджень: цілеспрямоване вивчення впливу індивідуально-диференційованої методики фізкультурно-оздоровчих занять шейпінгом на психоемоційний стан жінок зрілого віку.

Ключові слова: *індивідуально-диференційований підхід, жіночий організм, зрілий вік, соматотип, овариально-менструальний цикл, процес оздоровлення, шейпінг, фізичний стан.*