



**PEDAGOGICAL DESIGNING OF
LESSONS BY SHAPING
WITH WOMEN OF THE MATURE AGE**

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Анотація

Стаття присвячена дослідженню якісної і кількісної характеристики рухового режиму жінок зрілого віку, що становить одну з найважливіших проблем сучасного розвитку оздоровчої фізичної культури. На першому етапі були виявлені ціннісні і мотиваційні орієнтири жінок зрілого віку (21-55 років), визначено їх вихідний рівень фізичного розвитку, функціонального, психічного стану і фізичної підготовленості. Визначено критерії індивідуально-диференційованого підходу до проектування оздоровчих шейпінг-занять з урахуванням биоритмики жіночого організму. На другому етапі розроблена загальна схема організації індивідуально-диференційованої методики побудови занять оздоровчим шейпінгом з жінками зрілого віку. Планування програм шейпінг-занять здійснювалося за принципом циклічності, виділені мікро-, мезо- і макроцикли. Реалізовано дев'ятимісячний макроцикл оздоровчих шейпінг-занять (вересень-травень) складається з трьох етапів: підготовчий, основний і стабілізуючий. З метою реалізації оздоровчих і естетичних мотивів в основному (розвиваючому) етапі макроцикла були розроблені дві програми занять - силового і

аеробного спрямування. Структура шейпінг-заняття силового і аеробного спрямування для жінок зрілого віку вибудована за блоковим принципом. Розподіл навантажень, їх тривалість, інтенсивність і обсяг регулювалися індивідуально в залежності від гормонального фону жіночого організму протягом оваріально-менструального циклу. На третьому етапі ефективність індивідуально-диференційованої методики побудови занять оздоровчим шейпінгом підтверджується сприятливою динамікою фізичного, функціонального, психічного стану і фізичної підготовленості жінок 21-55 років.

Ключові слова: оздоровлення, жінки, зрілий вік, шейпінг, методика, індивідуалізація, диференціація

Аннотація

Проведений педагогічний експеримент включав в себе определение ценностных и мотивационных ориентиров женщин зрелого возраста (21-55 лет), их исходного уровня физического развития, функционального, психического состояния и физической подготовленности. Выявлены критерии индивидуально-дифференцированно-го подхода к проектированию

оздоровительных шейпінг-занятий с учетом биоритмики женского организма. Разработана общая схема организации индивидуально-дифференцированной методики построения занятий оздоровительным шейпінгом с женщинами зрелого возраста. Реализован девятимесячный макроцикл оздоровительных шейпінг-занятий состоящий из трех этапов: подготовительный, основной и стабилизирующий. Эффективность разработанной методики построения занятий оздоровительным шейпінгом подтверждается благоприятной динамикой физического, функционального, психического состояния и физической подготовленности женщин 21-55 лет.

Ключевые слова: оздоровление, женщины, зрелый возраст, шейпінг, методика, индивидуализация, дифференциация.



Formulation of the problem.

Preservation and restoration of the health of women of mature age is one of the urgent problems of our time and represents a scientific and practical interest that contributes to the solution of the social, demographic and cultural problems of society. The mature age period is one of the critical periods for a woman when the stable stage of development of her body is replaced by an involutionary one - the predominance of destructive structures over the formed and subsequent weakening of functional activity [4, 7, 11].

The problems faced by a woman in the mature period of life are perceived as crisis. The image of maturity requires adaptation through psychophysical, psychological and behavioral reconstructions. First and foremost, it is important to adapt to the psychophysiological changes that occur against the background of hormonal restructuring of the female body. For a woman, maturity is a certain stress, negatively affecting her life activity. The presented main characteristics determined the interest in the female maturity of representatives of various fields of knowledge [5, 10, 12, 16].

Analysis of scientific research and publications. Practice shows that in recent years, in women, aging in the vast majority of cases is of a premature type. Hypokinesia in combination with an increase in the intensity of neuropsychic effects contributes to the development of accelerated aging and diseases. Restriction of muscular activity in adulthood leads to detenity and deregulation of already imperfect adaptive mechanisms. Scientific research convinces that a sufficient level of motor activity is one of the main factors in slowing the aging process, maintaining and increasing the physical capacity of mature women [3, 5, 9, 14].

Currently, there is a dissatisfaction with the traditional physical training of women of various ages and professions [4, 10, 11, 13]. Ma-

ture age contingent is the most demanding for the quality and effectiveness of modern physical culture and health services [4, 7, 11].

To date, a promising area in the field of recreational physical culture is considered to be the modernization of the content of physical culture and health classes, health programs for various categories of the population [2, 5, 13]. Its solution is based on an equally important problem that is related to the need to address the monitoring of the initial physical and functional state of the organism, which allows a qualitative and effective use of a specific health program [4, 7, 15].

The presence of a great interest in shaping, as a fitness and health system, determines the high relevance of scientific research that would improve the methodology of this type of motor activity, the organizational and pedagogical foundations of development and technology shaping training in the software of classes in relation to the mature age group of women involved [5, 9, 11].

Pedagogical design in modern conditions is becoming one of the brightest trends in the development and renewal of physical culture and health work in pedagogical science and practice [4]. Pedagogical activity from reproductive (blind copying of activities) should go to a qualitatively new productive (innovative), aimed at developing and testing new highly effective ways of organizing the recovery process.

Purpose of research: to develop and experimentally substantiate the methodology of pedagogical designing of classes by shaping with women of mature age.

Results of the study and their discussion. In the present study, 86 women aged 21-55 years participated in the training on the basis of the sports and health center at the Gomel State University. F. Skaryna.

At the first stage, the identification of value-motivational landmarks for shaping classes, the definition of the initial level of physical

development, functional, mental state and physical fitness of this contingent of potential students was carried out.

According to the method of M. Rokich [8], based on the ranking of the list of value orientations, it was revealed that the value of «Health» (physical and mental) in the first place in all women of adulthood is 100%, which undoubtedly confirms the necessity of developing a project for improving shaping of occupations. In second place 89% «Happy Family Life» - the well-being of the family, caring for its members has always been a distinctive feature of the fair sex. Third place in terms of importance 78% is appropriated to the value of «Productive life» (maximum full use of their capabilities, strengths and abilities), confirms the fact of active life position of women in adulthood, active desire to realize ideas and satisfy their ambitions. The fourth place was taken by the value «Self-confidence and inner harmony» 73%, expressing freedom from internal conflicts.

Revealing the motivational orientations of women to shaping, presumed ranking by the importance of four factors, the results indicate that the leading factor is the «Health» factor - 43%, the second line in the rating was assigned to «External appeal» - 31%, the third position was taken by «Psychological» factor - 17%, in the fourth position - 9% «Social».

Morphofunctional diagnostics and determination of the level of physical preparedness of a particular practitioner were carried out taking into account the phases of the individual ovarian-menstrual cycle (OMC). The above studies were conducted for each woman in the same, most favorable - postmenstrual (6-12 days from the beginning of the cycle) or - postovulatory phase (16-24 days from the beginning of the cycle).

The structural assessment of the initial level (I mesocycle) of morphofunctional indices and indicators



of physical fitness of mature women is presented in Table 1.

As a result of the assessment of the initial morphofunctional state and physical fitness of mature women, deviations from the normative values of most indicators were revealed.

So, the indicator of body weight in comparison with normative is exceeded by 18,7% (on the average 11 kg). Outside the norms of development are the following indicators: weight-growth index (by 13.4%), vital capacity of lungs (VCL) by 15.2%, life index (by 27.3%), heart rate (heart rate) by 11.8%, the results of a breath-holding test (by 13.7%), the overall performance of PWC170 (by 10.2%), blood pressure (BP) by 6.7%, significantly exceeded fat (by 35.4%) and, on the contrary, the muscular component of the body weight was reduced (by 8.2%).

The initial level of health of subjects, determined by the method of G.L. Apanasenko [6] in negative values, that is, it is estimated as low.

This is evidenced by the results of test exercises, which showed that subjects had an average of 34.5% lower than the normative values of general and 38.0% - strength endurance, 44.4% - strength, 16.5% - speedily strength abilities, 6.2% explosive strength, and 30.7% flexibility.

As a result of preliminary (I mesocycle) diagnosis of the mental state of women by the method of N.A. Kurgansky and T.A. Nemchin [1] revealed the average indices of mental activity, interest, emotional tone, tension and comfort. Evaluation of the initial results showed a different degree of severity in individual mental indicators. Thus, the analysis of women's preliminary psychodiagnosis revealed that subjects have an average degree of severity in terms of indicators of mental activation, interest, emotional tone. The voltage index is noted in the high zone, and the degree of comfort opposite is fixed by a low expression. In general, these indica-

Table 1

Dynamics of the average indices of the morphofunctional state and physical preparedness of mature women in the process of pedagogical experiment

Indicators	Meso-cycle	21-55 years (n=86)	Change (%)	P
Body mass (kg)	I	70,5	13,2	<0,05
	VI	61,2		
The Quetelet index (g/cm)	I	425,7	13,3	<0,05
	VI	369,2		
VCL (ml)	I	2922,6	11,9	<0,05
	VI	3272,6		
Life index (ml/kg)	I	41,5	29,4	<0,05
	VI	53,7		
Heart rate at rest (уд/min)	I	82,3	12,1	<0,05
	VI	72,3		
Blood pressure systolic (mmHg)	I	134,2	8,5	<0,05
	VI	122,8		
Blood pressure diastolic (mmHg)	I	82,3	10,3	<0,05
	VI	73,8		
Test of Stange (c)	I	35,4	29,1	<0,05
	VI	45,7		
PWC170 (kg m/min kg)	I	10,9	11,9	<0,05
	VI	12,2		
Recovery time after 20 sit-ups (c)	I	126,1	18,4	<0,05
	VI	102,9		
The level of health according to G.L. Apanasenko, points	I	-2,5	73,6	<0,05
	VI	9,5		
Fatty component (%)	I	33,8	25,4	<0,05
	VI	25,2		
Muscle component (%)	I	26,6	26,3	<0,05
	VI	33,6		
Run 2 km (min.c)	I	1074,4	20,1	<0,05
	VI	858,2		
Forward tilt (cm)	I	3,9	84,6	<0,05
	VI	7,2		
Flexion and extension of arms (number of time)	I	4,5	124,4	<0,05
	VI	10,1		
On the crossbar (c)	I	7,5	78,6	<0,05
	VI	13,4		
Long jump from a place (cm)	I	120,5	7,1	<0,05
	VI	129,1		

tors point to women's poor health, low working capacity, tension, anxiety, concern and dissatisfaction.

At the second stage, a general scheme was developed for organizing an individually differentiated



technique for constructing exercises of health shaping with women of mature age (Figure 1). The planning of the shaping exercises was carried out according to the fundamental principle of cyclicity, micro-, meso- and macrocycles were identified.

In the experiment, the nine-month macrocycle of health-improving shaping exercises (September-May) was implemented consisting of three stages: preparatory, basic and stabilizing.

The preparatory stage lasting 6 weeks (1 mesocycle), the main tasks are diagnosing the state of the body's kinetics, adapting the body to physical loads, drawing up individual-differentiated corrective shaping programs.

The main (developmental) stage was 24 weeks (4 mesocycles) aimed at the transition to a higher level of physical fitness, correction of the physique, changes in muscle topography, correction of disorders in the spatial organization of the body of mature women, their functional state of the cardiovascular and respiratory systems, strengthening the musculoskeletal system, increasing the level of physical fitness in accordance with subjective and objective indicators.

Stabilizing stage - 6 weeks (1 mesocycle) is aimed at maintaining the achieved level of morphofunctional state, physical fitness and the state of the kinetics of the body of mature women.

Shaping the program of a separate lesson consisted of several parts of different target orientation. Since the dominant motives of mature women to shaping are the strengthening of health, the correction of build, the normalization of body weight, then in order to realize these health and aesthetic motifs in the main (developing) stage of the macrocycle, two training programs were developed - power and aerobic orientation built on a block basis.

When organizing the classes, the individual group method was applied, when the goals and the con-

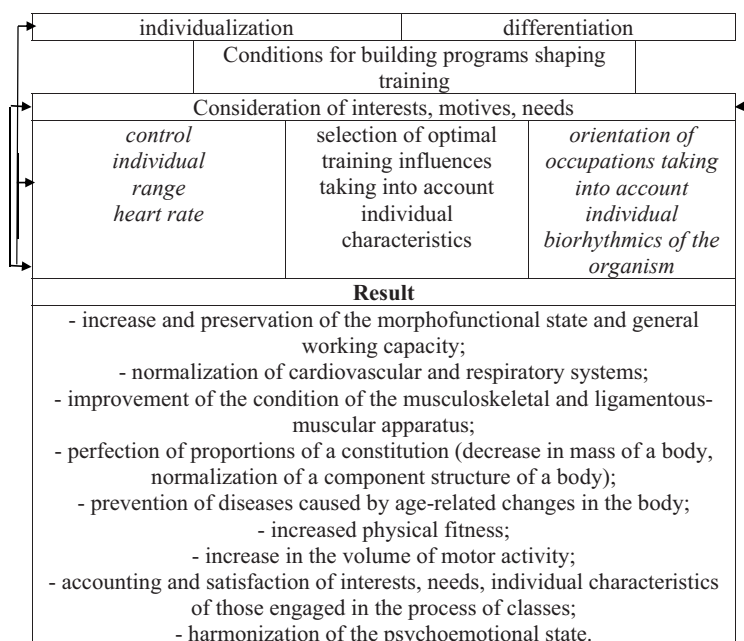


Fig. 1. Scheme of organization of individually differentiated methods of constructing exercises of health shaping with women of mature age

tent of the program were common for all involved, but the distribution of loads, their duration, intensity and volume were individually regulated depending on the hormonal background of the female body during the OMC. The beginning and end of a single microcycle is due to the duration of each phase of the biorhythmic organism of the individual woman.

In accordance with the individual functional status of women in each class, the experimental group was divided into three subgroups: in the first subgroup, women were in premenstrual, menstrual and ovulatory phases, in the second subgroup - in the postmenstrual phase, in the third subgroup - postovulatory, which allowed to differentiate the process.

Thus, depending on the particular phase of the OMC, women had the option of choosing a subgroup. Formed subgroups of mature women were engaged simultaneously, but each in its own individual motor sector with a video instructor. This approach largely protected the

body of women from physical and psychophysiological overload. In the process of improving the shaping of the classes, the content of the complexes was adjusted as the individual approach to each practitioner was adjusted. Classes were held in an organized mode three times a week for 60 minutes.

At the third stage, the evaluation of the effectiveness of the developed methods of organizing recreational shaping sessions was determined by the dynamics and reliability of the changes that occurred in the indicators of physical development, functional, mental state and physical fitness of mature women.

Analysis of the data obtained as a result of the study of the morphofunctional state and physical preparedness of women revealed significant changes in all indicators in comparison with baseline values (see Table 1). After nine months of shaping training, it was found that the subjects weight significantly decreased by 9.3 kg, making up the appropriate weight. Due to the decrease in body weight, the values



of the Quetelet index, which characterizes the proportionality of physical development, also significantly decreased.

The level of vital capacity of the lungs (VCL) was statistically significant ($p < 0.05$), compared to the original 350 ml. The index of the vital index significantly increased by 12.2 ml/kg and corresponds to the norm. The resting heart rate decreased by 10.0 beats/min ($p < 0.05$), systolic blood pressure by 11.4 mmHg. ($p < 0.05$), diastolic by 8.5 mmHg. ($p < 0.05$).

In the process of training in health shaping, the results of functional tests significantly improved and reached the norm. The greatest increase is observed in the Stange sample at 10.3 s ($p < 0.05$), in the PWC170 test – at 1.3 kg m/min kg ($p < 0.05$), which indicates a good level of physical condition. Statistically significant (for 5% of the significance level), the level of physical health of those engaged, assessed by the method of G.L. Apanasenko: the increase was 12.0 points, which corresponds to the «average» assessment of the functional level of health.

Evaluation of the body composition of the body showed that the percentage of fat was less. There was a dynamic decrease ($p < 0.05$) of the fat component in the body of women – by 25.4%, the muscular component increased by 26.3%. The parameters of the body composition reached the norm.

As a result of the analysis and systematization of these test exercises, allowing to assess the different sides of physical fitness: flexibility, endurance, strength, speed – a reliable increase in the studied parameters ($p < 0.05$) was revealed.

In the process of improving the shaping of occupations, positive changes in the mental sphere of mature women are also noted. Thus, the analysis of the results of testing women after the end of the experiment (VI mesocycle) revealed that the rates of mental ac-

tivation, interest and emotional tone decreased by 53.7% (7.3 points), 45.0% (5.4 points) and 49.2% (6.3 points) is a high degree of compliance. The same trend is observed in the dynamics of comfort. By the end of the experiment, women improved this indicator by 45.5% (7.1 points), which also corresponds to a high degree of severity. Monitoring of the assessment of tension revealed a decrease in women's index by 38.9% (6.4 points) – an average degree of severity.

Conclusions from this study.

The results of the study make it possible to draw the following conclusions:

1. Individual-differentiated approach to the construction of recreational shaping exercises allows you to more purposefully manage the morphofunctional improvement of the body of mature women and reach the optimal level of their mental state and physical readiness.

2. The methodology of the pedagogical design of the classes of health shaping with women of mature age is based on an organic combination of taking into account their individual characteristics, value-motivational preferences and the phaseicity of their specific biological cycle, which contributes to the achievement of a higher cumulative effect of adaptation of the organism to training influences, an increase in the level of morphofunctional and physical preparedness, health status.

3. The effectiveness of the individually differentiated methods of constructing exercises by improving shaping is confirmed by statistically significant ($p < 0.05$) improvement in all recorded indicators of the physical, functional, mental state and physical fitness of women aged 21-55 years.

Prospects for further research are the purposeful study of somatotypic features of mature women.

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