AJSIHD
GLOBAL RESEARCH NETWORK

AMERICAN Journal of Science on Integration and Human Development
Volume 2, Issue 3, 2024 ISSN (E): 2993-2750

The Influence of Fitness on the Physical Condition of Middle-Age Women of Different Somatotypes

Alisher Odilovich Babayev
A Teacher, Gulistan State Pedagogical Institute

Abstract: This article examines the influence of popular fitness means on the development of physical qualities and the functional state of women of the second period of adulthood of various somatotypes.

Keywords: women 35-45 years old; fitness programs; somatic type; physical qualities; functional state.

Introduction. It is known that women take an active part in the political and economic development of society. Their activities dominate in the implementation of family development, in ensuring the comfort and well-being of children. Therefore, the most important state and socially significant task is to create conditions that ensure a high level of development of their physical capacity (K. D. Chermit, 2010).

Changing demands of women, their understanding of the need to make independent efforts to preserve their own health led to the creation by specialists in the field of physical culture of a fitness system, which is an innovative area of health-improving physical culture and includes various types of physical culture and health activities (L. G. Stamova, 2010; E G. Saikina, G. V. Ponomarev, 2011).

At the same time, an analysis of modern scientific and methodological literature (O. N. Stepanova, S. V. Savin, 2007; E. A. Repnikova, 2010; L. S. Dvorkin, 2010) confirms that widely advertised fitness -programs and methodological recommendations do not always take into account the characteristics of the physical condition of those involved, which determined the relevance of this study.

The purpose of the study is to identify the features of the influence of fitness programs on the development of physical qualities and the functional state of women 35-45 years old.

Methods and organization of the study. The experiment involved 142 women aged 35-45 years old, who were divided into 7 groups (6 experimental groups of 20 people each and one control group of 22 people) of different somatotypes (in each group there were 5 representatives of MiS and MaS types and 10 - MeS) and the results of identified motivation in preferring types of fitness. Each group of women did different types of fitness three times a week. Women from EG1 did step aerobics, EG2 – slide aerobics, EG3 – deck training, EG4 – circuit training, EG5 – fitness yoga, EG6 – Pilates system and CG – basic aerobics (Table 1). The content of pedagogical testing of women included generally accepted pedagogical (Table 2) and functional tests (Table 3).

Research results. At the beginning and at the end of the experiment, a study was carried out on the physical fitness and functional state of women of the second mature age, as a result of which the growth rate of the studied data was determined.

The research results showed that women from the experimental groups had a significant advantage in the following indicators of the development of physical qualities:

- according to the "flexion and extension of the arms in a lying position" test, the superiority of the results of women from EG3 doing deco aerobics compared to the CG was 13.6%;
- the results of the "standing long jump" test were significantly higher among representatives of EG2 (slide aerobics classes)
- 2.8% (Table 2);– in the test "raising the body into a squat position from a supine position", a significant advantage was found for women from EG4 engaged in circuit training compared to the CG
- 16.4%; – according to the test "holding the body hanging on a crossbar with bent arms", reliable results were revealed among representatives of EG3 (decaerobics classes)
- 13.3%; – the rate of increase in the endurance indicator in the 1000 m run in EG1 (step aerobics classes) exceeded the swing in women from the CG by 3% and by 3.1% in EG2 (slide aerobics classes); – results of women EG5 engaged in fitness yoga were also significantly higher in these indicators of flexibility, amounting to 13.6% in the "sitting forward bend" test and 17.2% in the test determining "shoulder joint flexibility".

Thus, significant differences in the growth rates of physical quality indicators were obtained based on strength values in the experimental group of women involved in deco aerobics (EG3), circular

Table 1. Quantitative distribution of the women studied by type of fitness

Step	aerobics slide	aerobics deck	training circuit	training fitness	yoga System Pilates	basic aerobics
EG	EG	EG	EG	EG	EG	KG
20	20	20	20	20	20	22

Table 2. Growth rate of indicators of physical qualities of women 35-45 years old (%) (M±m)

Indicators	EG (1)	EG (2)	EG (3)	EG (4)	EG (5)	EG (6)	KG (7)
Bending and extending the arms while lying down (number of times)	6,6±0,21	4,1±0,19	13,6±0,20	13,7±0,20	13,5±0,20	10,5±0,21	1,7±0,26
Raising the body into a squat position in 30 s (number of times)	6,9±0,42	7,0±0,44	15,4±0,29	16,4±0,32	15,9±0,31	15,7±0,34	0,6±0,43
Static hang on the bar (c)	0,5±0,32	0,6±0,32	13,3±0,27	2,2±0,35	2,2±0,28	1,1±0,32	0,5±1,39
Standing long jump (cm)	0,2±1,33	2,8±0,84	0,9±1,35	0,8±1,35	,2±0,33	,2±0,34	0,1±1,31
Seated forward bend (cm)	1,4±0,33	2,1±0,31	,2±0,30	3,9±0,32	13,6±0,27	7,6±0,27	0,7±1,31
Twisting of arms in shoulder joints (cm)	2,1±0,16	2,1±0,16	2,1±0,16	2,1±0,16	2,1±0,16	2,1±0,16	0,2±0,15
Running 1000 m (s)	3,0±3,16	3,1±3,31	0,4±2,49	0,6±2,47	0,3±2,18	0,3±2,99	0,1±3,80
Run 100 m (s)	4,2±1,17	3,3±1,06	2,9±1,09	2,7±1,21	1,6±1,18	,5±1,16	1,3±1,86
Romberg test (c)	1,9±0,60	,5±0,74	1,2±0,72	0,9±0,53	7,8±0,38	2,2±0,57	0,8±0,75

Note: significant differences in indicators are highlighted at $p<0.05$ according to Student's t-test between the values of indicators of the experimental and control groups.

Table 3. Growth rate of indicators of the functional state of women 35-45 years old (%) (M±m)

Indicators	EG 1	EG 2	EG 3	EG 4	EG 5	EG 6	KG
Vital capacity (ml)	1,7± 20,27	1,9± 17,63	0,2± 22,25	0,7± 20,09	0,5± 20,92	0,6± 22,80	0,2± 23,98
Stange's test (c)	5,5± 0,48	5,9± 0,55	3,1± 0,78	3,0± 0,76	5,6± 0,59	3,5± 0,84	0,7± 0,97
Genchi test (c)	3,4± 0,52	5,9± 0,40	2,7± 0,61	2,5± 0,59	5,6± 0,70	3,5± 0,59	0,3± 0,54
Orthotest (bpm)	14,6± 1,47	5,3± 1,39	13,5± 1,30	14,4± 1,37	20,5± 1,33	16,7± 1,34	0,1± 1,66
Ruffier's test (score)	9,9± 0,20	0,1± 0,21	10,2± 0,23	10,0± 0,22	9,5± 0,26	9,9± 0,17	0,4± 0,53
PWC170 rel. (kgm/min/kg)	0,9± 1,92	1,0± 1,46	0,5± 0,64	0,3± 0,95	0,2± 0,97	0,2± 0,98	0,1± 1,65
MIC rel. (ml/min/kg)	4,8± 0,02	5,8± 0,03	0,8± 0,01	0,6± 0,01	M 0,6± 0,01	0,5± 0,03	0,1± 0,03

Note: significant differences in indicators are highlighted at $p<0.05$ according to Student's t-test between the values of indicators of the experimental and control groups.

training (EG4) and the Pilates system (EG6), endurance in the experimental group doing step aerobics (EG1), endurance and strength in the experimental group doing slide aerobics (EG2), flexibility and strength in the experimental group of women. doing fitness yoga (EG5).

In terms of the growth rate of functional state indicators, a significant advantage was obtained for women from the experimental groups (Table 3).

Women who did step aerobics (EG1) were superior to women from the control group according to the Stange test - 5.5%, Ruffier - 9.9%, PWC170 - 0.9% and MOC - 4.8%.

An advantage was established in the group of women who did slide aerobics (EG2) in terms of vital capacity (VC) - 1.9%, Stange and Genchi tests - 5.9% each, Ruffier - 10.1%, as well as in the test PWC170 – 1% and maximum oxygen consumption (MOC) – 5.8%.

Reliably high increases were found in the experimental groups of women involved in dektraining (EG3) and the Pilates system (EG6), in terms of the Ruffier test by 10.2 and 9.9%, respectively.

The experimental group of women from EG5 who practiced fitness yoga showed significantly higher percentage increases in the orthostatic test - 20.5%, Stange and Genchi tests - 5.6% each.

A significant superiority of women involved in circuit training EG4 was revealed, according to the results of the Ruffier test - 10% and the orthotest - 14.4% compared to the control group.

Conclusions. The data obtained allow us to draw a conclusion about the specific direction of the impact of various fitness means on the development of physical qualities and the functional state of women. Accordingly, in order to increase the effectiveness of classes, it is most advisable to use the comprehensive introduction of these types of fitness into the process of physical education of women aged 35-45 years.

LITERATURE:

1. Zebo Yusupova, B.R. Vafoyev S.I. Cho'lliev Sport biomexanikasi 2021-235c
2. Dvorkin, L. S. Natural scientific foundations of human sports and health activities: textbook / ed. Professor, Doctor of Pedagogical Sciences, Candidate of Biological Sciences L. S. Dvorkin. – Krasnodar: FGOU VPO KGUFKST, 2010. – 288 p.: ill.
3. Repnikova, E. A. On the possibility of using static-dynamic exercises in sports practice and health-improving physical culture / E. A. Repnikova // Current problems in the development of sports dancing, aerobics and fitness: collection of works of the All-Russian scientific and practical. conf. – Volgograd: VGAFK, 2010. – P. 58-60.

4. Saykina, E. G. Semantic aspects of individual concepts in the field of fitness / E. G. Saykina, G. V. Ponomarev // Theory and practice of physical culture. – 2011. – No. 8. – P. 6-10.
5. Stepanova, O. N. Technology for designing macrocycles of health (fitness) training for women aged 35-45 years with excess body weight / O. N. Stepanova, S. V. Savin // Bulletin of sports science. – 2007. – No. 6. – P. 43-47. 5. Chermit, K. D. Semantics and interrelation of the concepts “Physical culture of the individual”, “Professional-applied physical culture of the individual”, “Professional-applied physical training” / K. D. Chermit, D. E. Bakhov, M. M Ebzeev, N. Kh. Khakunov // Scientific Notes of the University. P. F. Lesgaft. – 2007. – No. 6 (28). – pp. 93–99.