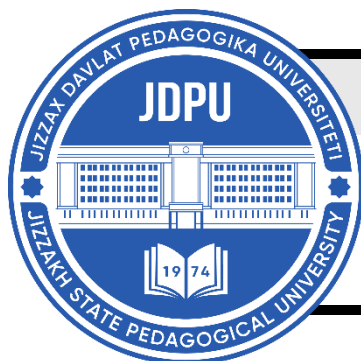




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THE EFFECTIVENESS OF THE METHOD USED TO IMPROVE THE FUNCTIONAL STATE OF WOMEN

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ABOUT ARTICLE

Key words: women, functional state, heart rate (HR), respiratory rate (RR), systolic blood pressure (SBP), diastolic blood pressure (DBP), vital lung capacity (VLC), healthy lifestyle, physical education tools, sport, training.

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Abstract: In this article, the author presents the final results of special test trials conducted among women in the experimental and control groups as part of a study on women's functional state. Based on the outcomes of these tests, the author also provides practical recommendations. During the scientific study, the effectiveness of the developed methodology aimed at improving women's functional condition was identified. According to this methodology, tests were conducted on female participants before and after the research, allowing for well-founded conclusions to be drawn based on the obtained results. The final outcomes of the study show that the functional indicators of the women significantly improved. This indicates the effectiveness of the developed methodology.

Introduction

The role of physical education in strengthening women's health is invaluable. However, nowadays, a significant proportion of women in society lead a sedentary lifestyle. Naturally, physical inactivity leads to problems such as excess weight, which affects not only physical preparedness but also the functional state of the individual. As a result, many women living in multi-story buildings are unable to reach upper floors without elevators. In such situations, issues like increased heart rate and respiratory rate begin to appear. One of the most effective ways to improve the functional state of women is the efficient use of physical education tools combined with the establishment of rational nutritional habits to promote a healthy lifestyle. The higher a person's functional capabilities, the longer their life expectancy. Developing special physical exercises with the help of physical education tools to improve the functional state of women is one of the most urgent tasks faced by specialists in this field today. The lack of awareness among women regarding what types of exercises to perform to maintain their health, the best time of day for training, how long to train, and how the exercises influence their functional state reflects the fact that insufficient scientific research has been conducted in this area. Therefore, it remains one of the most urgent and unresolved issues in the field of physical education.

Materials and methods

Promoting a healthy lifestyle among the population involves not only engaging in sports but also maintaining proper nutrition, which is of vital importance. According to conducted studies, 44% of the population leads a physically inactive lifestyle, and 36% do not follow the principles of healthy eating. As a result, 56% of people are overweight, and 38% experience issues related to blood pressure. Non-communicable diseases are becoming a leading cause of premature death. [7,1]

Among the measures aimed at promoting a healthy lifestyle among the population, a key role is played by the widespread dissemination of hygienic knowledge to all segments of society and educating people to effectively acquire and apply this knowledge. [8,10]

According to scientists, the biological processes of aging are, of course, inevitable. However, many factors of a healthy lifestyle (HLS) are under human control, and people should be able to manage them, as they can influence the rate and nature of aging. While we are not yet capable of stopping time, scientists emphasize that staying healthy and beautiful largely depends on ourselves. [8,9]

It should be emphasized that maintaining health throughout life is in a person's own hands, and to achieve this, it is necessary to follow these seven key recommendations: avoid overeating; consistently monitor body weight; eat at regular times; properly organize work and rest; ensure sufficient sleep; follow a routine of physical activity; and refrain from smoking and consuming alcoholic beverages. [7,13,5]

If a person follows the principles of a healthy lifestyle, it is possible to extend the "safe zone" boundary by an additional 6 to 10 years of life. The aging process in humans is associated with a decrease in the body's energy production, which typically begins around the age of 25 and continues to decline by approximately 3.0–7.5% every ten years. This process, too, can be regulated through a healthy lifestyle and is within the individual's control [7, 8,10].

Aerobic exercises are recognized as one of the effective means of health-improving physical education. [9,10,15]

Results and discussion

Organizing a Proper Eating Regimen

In essence, eating is necessary for humans not just for pleasure, but primarily to support vital bodily functions, to move, and to restore the energy (strength and vitality) required for work and activity. To meet this essential need, it is important to properly organize one's daily eating schedule.

According to current norms, it is customary to eat three times a day. First and foremost, it should be noted that any product capable of providing a certain amount of energy when consumed is considered food, and the act of consuming it is considered eating. Some people mistakenly believe that eating refers only to consuming a hot meal. This is an incorrect understanding.

The key issue in addressing the problem of maintaining a proper eating routine is how to distribute energy-providing foods throughout the day. That is what needs to be properly planned.

As mentioned earlier, we must choose foods based on the amount of energy required for our daily activities. At the same time, we know that energy expenditure is not consistent throughout the 24-hour day. For example, people are usually more active during the day and therefore should consume the necessary energy-providing foods during that time.

Secondly, energy expenditure is also not constant throughout the day. For instance, after having dinner, a person goes to sleep and does not require additional energy early in the morning. Waking up and immediately sitting down to eat may lead to unnecessary food intake. Therefore, before having breakfast, a farmer should spend 1 to 1.5 hours doing fieldwork, a livestock keeper should tend to their animals, and urban dwellers should take a walk or jog in parks, nearby recreational areas, stadiums, or along walking paths, engaging in physical activities or morning exercises.

At the final stage of the pedagogical experiment, special test trials were conducted to assess the functional state of women aged 18 to 35 in the experimental group. The obtained functional indicators and their statistical characteristics are presented below.

By the end of the experiment, the average resting heart rate (HR) among participants was 70.18 ± 5.13 bpm. The average systolic blood pressure (SBP) was 122.18 ± 6.73 mmHg, while diastolic blood pressure (DBP) was 81.09 ± 5.22 mmHg. The average respiratory rate (RR) was 19.95 ± 3.02 breaths per minute.

The Stange test result averaged 44.36 ± 6.28 seconds, and the Genchi test showed an average of 20.64 ± 2.91 seconds. The average vital lung capacity (VLC) was 3823.32 ± 577.63 ml. These final results are summarized in Table 1.

Table 1.

Functional readiness indicators and statistical characteristics at the end of the study (Experimental group, n = 22)

RESEARCH CONCLUSION							
Nº	HR	RR	SBP	DBP	Shtange	Genche	VLC
1	71	120	83	21	45	18	3937
2	609	122	86	25	41	21	4127
3	67	113	75	18	47	22	3554
4	70	118	72	21	39	19	3901
5	74	130	94	24	43	18	3582
6	72	123	92	19	46	23	4087
7	68	96	64	23	38	20	3755
8	71	113	77	17	43	18	3647
9	76	131	86	22	39	23	4042
10	69	117	91	26	47	19	3628
11	71	126	82	19	49	25	3910
12	73	141	91	17	53	21	4159
13	76	129	83	18	46	19	3726
14	67	123	79	16	42	23	3562
15	65	118	73	19	45	18	3826
16	70	122	81	20	43	19	4069
17	68	128	77	18	47	21	3816
18	72	119	81	17	41	22	3521
19	65	118	78	16	44	20	3850
20	68	121	82	19	48	24	4127
21	69	133	74	21	43	22	3542
22	73	127	83	23	47	19	3745
$\bar{X}$	70,18	122,18	81,09	19,95	44,36	20,64	3823,32

σ	5,13	6,73	5,22	3,02	6,28	2,91	577,63
V, %	7,31	5,51	6,44	15,15	14,16	14,10	15,11

Indicator	Mean	Standard Deviation (σ)		Coefficient of Variation (V, %)		
Heart Rate (HR)	70.18	5.13	7.31			
Systolic BP (SBP)	122.18	6.73	5.51			
Diastolic BP (DBP)	81.09	5.22	6.44			
Respiratory Rate (RR)	19.95	3.02	15.15			
Stange Test	44.36	6.28	14.16			
Genchi Test	20.64	2.91	14.10			
Vital Lung Capacity (VLC)	3823.32	577.63	15.11			

Table 2

Dynamics of Changes in Statistical Characteristics of Functional Preparedness Indicators Among Women in the Experimental Group During the Study (n = 22)

	Start of the Experiment			End of the Experiment			Increase			
Tests	$\bar{X}$	σ	V, %	$\bar{X}$	σ	V, %	AŸ	HŸ	τ	P
HR	68,45	5,23	7,64	70,18	5,13	7,31	1,73	2,52	1,11	>0,2
RR	118,59	6,83	5,76	122,18	6,73	5,51	3,59	3,03	1,76	>0,05
SBP	77,86	5,23	6,72	81,09	5,22	6,44	3,23	4,14	2,05	<0,05
DBP	16,18	2,58	15,94	19,95	3,02	15,15	3,77	23,31	4,45	<0,001
Shtange	36,41	5,45	14,97	44,36	6,28	14,16	7,95	21,85	4,49	<0,001
Genche	16,95	2,54	14,98	20,64	2,91	14,10	3,68	21,72	4,47	<0,001
VLC	3244,45	517,26	15,94	3823,32	577,63	15,11	578,86	17,84	3,50	<0,01
Average								8,1		

The statistical characteristics of the functional preparedness indicators of the women in the experimental group were recorded in the course of the experiment, with their dynamic

changes reflected in Table 2 below. According to the data, during the study, the differences in functional indicators among the female participants aged 18–35 in the experimental group were as follows: resting heart rate (RHR) – $1.11 > 0.2$; systolic blood pressure (SBP) – $1.76 > 0.05$; diastolic blood pressure (DBP) – $2.05 > 0.05$; respiratory rate (RR) – $4.45 > 0.001$; Stange test – $4.49 > 0.001$; and the Genchi test showed a difference of $4.47 > 0.001$. Vital lung capacity (VLC) was $0350 > 0.01$ ml. The relative increase in the average functional preparedness indicators among the women in the experimental group throughout the experiment was approximately 8.1%.

At the end of the study, the functional indicators and their statistical characteristics for the female participants aged 18–35 in the control group were recorded as follows. At the conclusion of the experiment, the resting heart rate (RHR) of the participants in the control group was measured. According to the results, the average heart rate in a resting state among women aged 18–35 was 68.23 ± 5.01 beats per minute. The average systolic blood pressure (SBP) was 121.27 ± 5.18 mmHg. The average diastolic blood pressure (DBP) was 81.00 ± 5.13 mmHg. The average respiratory rate (RR) was recorded as 18.09 ± 2.77 breaths per minute. The result of the Stange test averaged 39.23 ± 5.64 seconds, while the Genchi test averaged 18.82 ± 2.71 seconds. The result for vital lung capacity (VLC) was an average of 3536.32 ± 542.85 ml.

At the end of the experiment, the comparative results of the statistical characteristics of the functional preparedness indicators recorded by the female participants in the control group ($n = 22$) are presented in the table below (Table 4). According to the data, during the study, the difference in functional indicators among women aged 18–35 in the control group was as follows: resting heart rate (RHR) – $0.57 > 0.5$; systolic blood pressure (SBP) – $0.89 > 0.3$; diastolic blood pressure (DBP) – $1.32 > 0.1$; respiratory rate (RR) – $2.09 > 0.05$; Stange test – $2.11 > 0.05$; Genchi test – $2.08 > 0.05$. Vital lung capacity (VLC) – $1.73 > 0.005$ ml. Based on the obtained results, the average relative increase indicator was 6.17%.

Conclusion

The final results of the study aimed at determining the functional state of women led to the following conclusions: Analysis of scientific and methodological literature, as well as the outcomes of the pedagogical experiment, showed that insufficient research has been conducted on improving the functional state of women. Moreover, there is a lack of adequately developed educational materials on this subject. The existing methods aimed at improving women's functional state are outdated. The need to develop new tools and methods became evident during the pedagogical research process. The results of the pedagogical tests conducted to assess the effectiveness of the developed methods showed that the physical preparedness of women in the experimental group significantly improved compared to the control group. The applied methods demonstrated their effectiveness in enhancing the functional state of women.

Preparing the body and mind, exercising self-control, overcoming desires, having strong willpower, and consciously striving to change one's way of life are some of the most important factors in establishing a healthy lifestyle.

Women play an invaluable role in the family. A healthy atmosphere at home, a positive mood, a well-balanced diet, and physical activity all directly depend on them. It would not be an exaggeration to say that a woman's appearance reflects the state of her health.

Women who lead a healthy lifestyle typically do not suffer from excess weight, are always in a good mood, manage their time effectively, and their bodies demonstrate healthy physical and functional indicators. To stay energized throughout the day and avoid feeling fatigued, women should consume foods rich in the vitamins and minerals essential to the body.

Basic Health-Improving Exercises is Walking. Walking is the simplest form of health-improving exercise. It can be performed by anyone, under any circumstances. Walking strengthens the heart, improves the function of internal organs, and enhances metabolic processes in the body. One of its advantages is that the load on the heart and organs never poses

a serious threat. A person can adjust their walking pace based on their heart condition — speeding up or slowing down as needed.

That's why slow and prolonged walking provides effective health benefits in cases of chronic joint diseases, post-heart attack recovery, or heart function disorders. The speed and distance of walking should be determined by the individual's condition. Suitable places for walking include paths, walkways, riversides, recreational areas, mountain or hillside slopes, or even simple field trails. The main requirements for walking are comfortable shoes and clothing, as well as planning or familiarizing oneself with the route in advance.

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