Innovative: International Multi-disciplinary Journal of Applied Technology
(ISSN 2995-486X) VOLUME 02 ISSUE 04, 2024

Comparative Analysis of the Body Mass Index of Elderly People with a State of Physical Activity

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Abstract:

In old age, the lifestyle changes. The majority of the people stop working in production, do less physical labor, which requires a lot of calories. In addition, due to the fact that the elderly have several chronic diseases, they are under the necessity to reduce physical activity and follow a certain diet.

Physical activity is recommended for any patient, but its volume depends on the physical fitness and activity of the patient, the initial state of health, the presence of chronic diseases.

Keywords: *elderly age, physical activity, body weight index.*

Introduction: old age is one of the important periods of human life, during this period morphological and functional changes occur in the body, during which there is a gradual depletion of vital activity [Vladimirov D.G.2004]. With age, there is a change in all anthropometric parameters. The rate and intensity of aging depend primarily on factors such as a person's genetic origin and lifestyle. If we approach the question of the first component - genetics, then it will not change, but you can work on the second part throughout your life.

The change in each physical indicator is strictly individual and is associated with physical activity, dietary habits, bad habits, social and family status, living conditions, existing diseases and other similar factors [Sharaikina E.N. 2004].

In addition to the variability of indicators of physical development and the structural structure of the body in older age groups (old age, old age and longevity), changes characteristic of all population groups were also identified [Petukhov A.B., Nikityuk D.B., Sergeev V.N. 2015].

Purposeful use of physical activity not only stops the age-related decline in physical abilities, but also significantly contributes to the progressive development of individual abilities. Elderly people not only receive positive emotions from regular physical exercise, but it will also have a positive impact on their mental health and prevent age-related diseases [Vladimirov D.G.2004].

According to experts of the World Health Organization (WHO), a low level of physical activity is one of the most important risk factors for health and one of the most important causes of death. In their opinion, they recommend the development of special measures for the development and promotion of normal physical activity for the elderly and elderly people who are least engaged in physical activity [WHO, 2010]

The assessment of the health status of the population is based on the study of the morphological features of the constitution, the level of their physical development [Shatrova O.V.2004].

Currently, the identification of signs of constitutional significance that serve as a sign of pathological changes associated with the somatotype remains relevant [Sharaikina E.P.2005]. Based on the anthropocentric approach to such studies, it is considered ideal to determine the parameters of physical development and body type [V.G.Nikolaev 2007].

Currently, in many countries of the world there is a scientific interest in studying the problems of the elderly and elderly people [Sharaikina E.P.2005]. The aging of the population is observed today in every mammal in the world. According to UN forecasts, by 2025 the total number of people aged 60 years and older will exceed 1.1 billion [WHO, 2010].

It has been proven that regular exercise plays a crucial role in maintaining the health of the elderly and slowing down the aging process, including dementia. Thus, the preservation of both physical and mental abilities of older people is a source of knowledge and self-awareness of their capabilities [Withall J, Stathi A, Davis M, Coulson J, Thompson JL, 2014].

Purpose: to evaluate the correlation of body mass index with physical activity in the elderly.

Material and methods: the study used the WHO classification of age indicators for 2016. According to him, 18-44 years - young people, 45-59 years - middle-aged people, 60-74 years - elderly, 75-89 - quite old and 90 and older are defined as long-livers.

Body mass index (BMI = weight kg/height m2) is estimated as follows: hypotrophy if BMI <18.5; if BMI-18,6-24,9 – body weight is normalized if BMI-25,0-29,9- overweight; BMI 30-34.9 - I degree obesity;

TMI– 35,0-39,9 – obesity of the II degree; BMI > 40 - obesity of the III degree.

The criteria for evaluating physical activity were based on:

- People who are not physically active - mostly people who stay at home or do not engage in physical activity were accepted;
- Persons with a low level of physical activity (FA) - mostly adopted people who walked in a capsule for 30 to 60 minutes a day and who did not engage in physical activity during the day;
- FA average people - they were accepted, mainly those who walked in a capsule for 60 to 90 minutes a day, or those who were engaged in lifting and transporting small weights;
- High-level FA individuals - mostly adopted individuals who walked or exercised on the piano for more than 90 minutes a day;

Results: 627 elderly men (273) and women (354) participated in the study.

Information about physical activity in the elderly

№	Age	Gender	Physical activity (FA)								
			Persons who are not physically active		Persons with a low level of PA		Persons with an average level of physical activity		Persons with a high level of physical activity		Total
			Quantity	%	Quantity	%	Quantity	%	Quantity	%	
1	60-74	Man	99	36,3	74	27,1	47	17,2	53	19,4	273
2	60-74	Woman	92	26,0	110	31,1	105	29,6	47	13,3	354
Total			191	30,5	184	29,4	152	24,2	100	15,9	627

When studying the body mass index of elderly men, 2 of them (0.7%) are hypotrophic, BMI is from 18.3 to 18.4, on average 18.35 ± 0.10, normally 65 (24%), that is, from 18.7 to 24.9, on average 23.5 ± 1.05 Kg, overweight in 118 (43%) is from 25.0 to 29.9, it was found that 13 (4.8%) obesity was grade II, from 35.2 to 39.8, on average 36.2 ±0.24, 3 (1.1%) obesity Grade III ranged from 40.2 to 41.1, with an average of 40.6±0.16.

When studying the body mass index of elderly women, 1 of them (0.3%) is hypotrophic, and BMI is 17.9, normal 88 (24.9%), that is, from 18.6 to 24.9, on average 23.5 ± 0.09 Kg, overweight in 155 (43.8%) is from 25.0 to 29.8, on average 27.5±0.06, 76 (21.5%) degree is from 35.1 to 39.8, on average 36.7±0.03, 9 percent (2.4%) obesity of the III degree is from 40.0 to 43.0, on average, it was 41.0±0.19. When the influence of the level of physical activity on the body mass index in older men was studied, it became known that:

The total number of physically inactive persons is 99, their BMI ranges from 21.3 to 41.1, on average 31.3 ± 0.26. Among them there are no hypotrophs, 3 of them (3.0%) are normal, from 21.3 to 24.9, on average 23.5± 0.54 kg, 26.3 (26.3%) overweight from 25.0 to 29.7, on average 27.6± 0.15, 56 (56.6%) obesity I degree, from 30.2 to 34.7, on average 32.0 ± 0.08, 12 (12.1%) obesity of the III degree was detected 40.2 from 41.1 to an average of 40.6±0.19.

There are 74 persons with a low level of physical activity in total, their BMI ranges from 18.3 to 40.6, on average 27.3 ±0.35. Among them, 1 of them (1.4%) is hypotrophic, with a norm of 18.3, 16 (21.6%), on average from 18.8 to 24.9, on average 23.6±0.26, overweight 43 (58.1%), on average from 25.0 to 29.8, on average from 25.0 to 29.8, overweight on average 27,3±0,11, 12 (16,1%), with obesity of the I degree, 1.4%) obesity of the III degree was 40.6.

The physical activity of middle-aged men in total is 47, their BMI ranges from 18.7 to 36.3, on average 25.7 ± 0.37. Among them, 2 of them (4.2%) are hypotrophic, 18., from 3 to 18.4± 0.04, with an average body weight of 18.3 ± 0.21, with a norm of 21 (44.7%), from 18.7 to 24.9, on average 23.4± 0.21, with an average body weight of 20 (42.6%), on average from 25.0 to 29.7± 0.17, on average 3 (6.4%), with average body weight.

There were 53 elderly men with a high level of physical activity, their BMI ranged from 21.3 to 30.3, on average 25.7 ±0.17. Among them there were no hypotrophic, 24 (45.3%) had normalized, from 21.3 to 24.9, on average 23.6± 0.12 kg, 28 (52.8%) had excess body weight from 25.0 to 29.7, on average 27.7±0.18, 1 (1.9%) had obesity of I degree 36.3, obesity was II and III degrees.

When the influence of the level of physical activity on the body mass index in older women was studied, it became known that:

The total number of persons who are not physically active is 92, their BMI ranges from 20.8 to 43.0, on average 33.5 ± 0.31. There are no hypotrophs among them, 1 is normal (1.1%), which is

22.4, 7 is overweight (7.6%), from 27.1 to 29.1 on average is 28.6± 0.16, 58 is on average (63.0%) grade I obesity, from 30.1 to 34.7 is on average 32.3± 0.08, 18 is on average up to, on average it was found that 41.0± 0.23.

Persons with a low level of physical activity have a total of 110, their BMI ranges from 18.7 to 41.3, on average 29.2 ± 0.27. Among them there are no hypotrophic, 3 of them (2.8%) are normalized, from 18.7 to 24.2, on average 22.6 ± 0.97 kg, overweight in 88 (80%) is from 26.9 to 29.8, on average 28.3 ± 0.04, in 13 (11.8%) - obesity of the I degree, from 30.0 to 34.6, on average 32.0 ± 0.23, in 4 obesity of the III degree was revealed to be 40.6 from 41.3 to 41.0±0.05 on average.

The physical activity of middle-aged women is a total of 105 people, their BMI is from 17.9 to 39.5, on average 24.8± 0.26. Among them, 1 of them (0.9%) is hypotrophic, which is 17.9, which is normal 60 (57.1%), from 18.6 to 24.9, on average 23.1± 0.22 Liters, on 39 (37.2%) overweight is from 25.0 to 29.7, on average 26.4±0.11, 4 (3.9%) obesity of the I degree, from 30.2 to 33.3, on average it was determined that there was no.

There were 47 elderly women with a high level of physical activity, their BMI ranged from 18.6 to 31.1, on average 24.8 ±0.26. Among them there were no hypotrophic, body weight was found in the range from 24 (51.1%) to 18.6±24.8, on average 23.0± 0.20 kg, overweight in 22 (46.8%) ranged from 25.2 to 29.6, on average 26.4±0.15, 1 (2.1%) obesity of I degree 30.9.

Discussion and analysis:

In the course of a study conducted in the city of Moscow of the Russian Federation (Razumov A.N. et al. 2017), the body mass index in older men averaged 24.7± 0.1. Data on the decrease in body mass index with age are also listed. (Sindeeva L.V. and B.2015) in the study, the body mass index in elderly women averaged 31.8 ± 0.1. In our study, these indicators were 28.2±0.16 and 28.4±0.15, respectively.

Conclusion, the factor that most affects the level of body mass index is this physical activity, the more physically active people are, the lower the body mass index. High levels of obesity are more common in people who are not physically active and have low physical activity. In recent years, there has been a large number of cases of obesity among the population, especially among the elderly. It has also been observed that in older people, obesity is more common in women than in men.

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