

Beqa Gentiana, Elezi Abdullah, Elezi Gresa. Overweight and kinesiological aerobic activity for women. *Journal of Education, Health and Sport*. 2019;9(9):213-221. eISSN 2391-8306. DOI <http://dx.doi.org/10.5281/zenodo.3396331>
<http://ojs.ukw.edu.pl/index.php/johs/article/view/7391>

The journal has had 5 points in Ministry of Science and Higher Education parametric evaluation. § 8. 2) and § 12. 1. 2) 22.02.2019.


© The Authors 2019;


This article is published with open access at Licensee Open Journal Systems of Kazimierz Wielki University in Bydgoszcz, Poland
Open Access. This article is distributed under the terms of the Creative Commons Attribution Noncommercial License which permits any noncommercial use, distribution, and reproduction in any medium, provided the original author (s) and source are credited. This is an open access article licensed under the terms of the Creative Commons Attribution Non commercial license Share alike.
(<http://creativecommons.org/licenses/by-nc-sa/4.0/>) which permits unrestricted, non commercial use, distribution and reproduction in any medium, provided the work is properly cited.

The authors declare that there is no conflict of interests regarding the publication of this paper.


Received: 25.08.2019. Revised: 30.08.2019. Accepted: 05.09.2019.

Overweight and kinesiological aerobic activity for women

Name Gentiana Beqa 
Affiliation University of Prishtina
Faculty of physical education and sport
Country Kosovo
Bio Statement —

Name Abdullah Elezi 
Affiliation University of Prishtina
Faculty of physical education and sport
Country Kosovo
Bio Statement —

Principal contact for editorial correspondence.

Name Gresa Elezi 
Affiliation University Clinical Center of Kosovo
Country Kosovo
Bio Statement —

Overweight as a result of the amount of subcutaneous adipose tissue in the body is determined, in addition to its hereditary characteristics, mainly by dietary habits and level of physical activity. Based on the current knowledge that one of the main causes of obesity is inadequate physical activity as the main regulator of energy in the human body, and the purpose of this research is based.

The purpose of the research is to determine the impact of planned kinesiological activity (Kangoo Jumps) on the reduction of overweight in favor of subcutaneous adipose tissue reduction in females.

The population sampled for this research was defined as female populations Mean age = 1995, SD = 4.66. The sample consisted 20 women who for the first time expressed a desire to practice at the "Gettfit Center" fitness center in Pristina. The following anthropometric variables were used to measure body mass and body volume : body weight (ABOWE), circumference of the upper arm (A CIUA), circumference of the chest (ACICH), circumference of the upper leg (ACIUL), circumference of the lower leg (ACILL) and subcutaneous fat tissue : upper arm skinfold (AUASK), subscapular skinfold (ASUSK), abdominal skinfold (AABSK), upper leg skinfold (AULSK) and lower leg skinfold (ALLSK).

The research was conducted during May and June of 2019, meaning it lasted 8 weeks to 3 days a week with one hour of scheduled Kangoo Jumps exercises. For estimating the difference between two dependent groups in arithmetic averages, paired t-test (Paired Sample T-Test) has been applied. We can emphasize that any well-planned physical activity in terms of intensity and extension leads to certain positive changes in the body. The results show that Kangoo Jumps with 128 - 135 bpm high-intensity music 3 times a week for one hour is one of the most effective fitness programs in reducing overweight in favor of reducing subcutaneous body fat mass. Also the results obtained show that training aerobic with Kangoo Jumps fitness program has not had the same effect on changes in adipose tissue by body egjioneve in population gender female hours, this training aerobic shows on a larger effect on reducing subcutaneous adipose tissue in the abdominal region.

Abstract

Key words: Kangoo Jumps; women; anthropometric variables; Paired Sample T-Test

Introduction

As a biotic need, kinesiological activity and nutrition are the most important segments of human life. The normal development of the human body and the improvement of health require that the ratio between energy consumption and energy expenditure by physical activity be equal. Any imbalance between these two vital factors for man leads to negative appearance, in children to inappropriate bodily development, to adults to various illnesses or to

overweight and health risk. There are a number of positive effects of kinesiological activities on human health. During physical activity in the body a number of biochemical processes occur in the body, affecting both bodily and conditioning as well as psychological aspects. A very important factor for the prevention of overweight is physical activity (Hunter, 2000). Overweight, recently treated as a disease, is a major health problem in developed society. Malnutrition is a major risk for many health problems and diseases. The causes of obesity, which means the collection of excess fat in the body to the extent is harmful to health, are numerous. Food Inappropriate, so a life of which more and more work is done sitting and spent many hours on the computer, contribute to increasing the number of people overweight (Andrijašević, 2010). In many countries prevalence of obesity is alarming and poses a serious threat to current and future health of the people of all ages (Inchley et al., 2016). According to the World Health Organization (WHO, 2016a), in 2010, 81% of adolescents from early to late stages are not physically active. One of the consequences of inactivity is the increasing tendency for weight and overweight (Inchley et al., 2016). We can safely say that overweight is one of the biggest problems today related to the development of multiple diseases in people of all ages (Kopelman, 2007). The Lancet (NCD-RISC, 2016) published one of the largest studies of the trend of the index body mass (BMI), which included 19.2 million people from 200 countries and relied on data from the 1998 study. The study revealed that today there are 266 million people male obese and 375 million women with overweight in the world, and that world population is on average six kilograms heavier than 1975. For comparison, in 1975 there were 105 million obese people in the world. Most obese people live in China and the USA, with about 20% of them in Croatia, ranking women 115th and men 66th in the world (NCD-RISC, 2016). In female subjects, overweight indicates body weight above the normal value with a body mass index higher than 25 kg / m² (Baretic et al. 2002), while overweight is defined as excess, respectively, excess body fat. or adipose tissue relative to the fat, or muscle mass of the body.

We can say that a person is obese when the amount of adipose tissue in their body is 20% higher than the optimal amount when a person has a body mass index greater than 30 kg / m² (Branca et al. 2005). There are a number of negative effects of being overweight on health. People who are overweight are not only more exposed to health problems, but also their daily lives are difficult. Therefore, physical activity with its action, in addition to affecting disease prevention and improving health, also reduces the occurrence of any psychological disorder associated with dissatisfaction with the physical appearance of a woman. The purpose of the research is to determine the impact of planned kinesiological activity (Kangoo Jumps) on the reduction of overweight in favor of subcutaneous adipose tissue reduction in females.

Methods

According to the nature of research science, this research belongs empirical category, while according to the purpose of realization is research applied to activity that aims the acquired knowledge

and new necessary information for practical application. The population from which the sample was taken for this study is defined as a nation of women of age Mean = 1995 years, SD = 4.66. The sample consisted of 20 women who for the first time expressed a desire to practice at the “Gettfit Center” fitness center in Pristina. Women registered for the first time at the “Gettfit Center” fitness center in Pristina have expressed a desire to be part of the experiment in this research. Before they undergo treatment with exercises Kangoo Jumps . The tested have received approval by doctor that they are in good health. The following anthropometric variables were applied to measure body mass and body volume : body weight (ABOWE), circumference of the upper arm (A CI UA) , circumference of the chest (ACICH) , circumference of the upper leg (ACIUL) , circumference of the lower leg (ACILL) and subcutaneous fat tissue : upper arm skinfold (AUASK) , subscapular skinfold (ASUSK), abdominal skinfold (AABSK) , upper leg skinfold (AULSK) and lower leg skinfold (ALLSK).

The research was conducted during May and June of 2019 , so it lasted 8 weeks, 3 days per week with one hour of scheduled Kangoo Jumps exercises . Elemental movement program includes : walking in place, running in place, pendulum, side lift (jumps with lifts), knee up, hamstring curl, jumping jack.

Program with elemental movement 3 weeks

PHASE	BPM (beats per minute)	DURATION
Warm ups	115 - 120 bpm	5 minutes
Music	128 - 135 bpm	35 - minutes
Cool down	118 - 122 bpm	5 minutes

The Kangoo Dance Program 3 weeks

PHASE	BPM (beats per minute)	DURATION
Warm up	115 - 120 bpm	5 minutes
Music	128 - 135 bpm	45 minutes
Cool down	118 - 122 bpm	5 minutes

The Kangoo Power program 2 weeks

PHASE	BPM (beats per minute)	DURATION
Warm up	115 - 120 bpm	5 minutes
Music	128 - 135 bpm	50 - minutes
Cool down	118 - 122 bpm	5 minutes

For the processing of the data, basic statistical parameters were applied, minimum score (Min) maximum score (Max), arithmetical mean (Mean), standard deviation (Std.Dev), standard error (St.Er), measure of asymmetry distribution (Skewness) degree of homogeneity of distribution (Kurtosis) and coefficients of variation (CV). For the assessment of the difference between two

dependent groups in arithmetical averages, the t-testing (Paired Sample T-Test) has been applied.

Result

In line with the research purpose, methodological approach and hypotheses, the obtained results are presented in two relatively separate sections. In the first part is analyzing the situation of the subjects in the first measurement (initial situation) in morphological characteristics and parts of the second is the analysed state entities to the second measure (final situation) in morphological characteristics after the experimental treatment. On Table 1 are presented basic statistical indicators of anthropometric variables before treatment with Kangoo Jumps exercises. Based on the values of the asymmetry test of all variables to be applied anthropometric shows a symmetrical distribution before treatment with exercises Kangoo Jumps. The results obtained for most of the anthropometric variables (8 variables) are below the arithmetic mean because the asymmetry test is positive (epicuric) which means that the results obtained on these four anthropometric variables are below the arithmetic mean. On both anthropometric variables, the asymmetry test is negative (hypocritical) which means that the results obtained on these two anthropometric variables are above the arithmetic mean. To verify the representativeness of arithmetic averages obtained and to get complete information on the sample, the statistical measures of variation is verified the homogeneity degree of statistical data, distribution a certain numerical values of the central values. Analyzing the values of the distribution parameters based on standard deviation (SD), minimum and maximum values, and coefficient of variation (KV%), it can be concluded that in most anthropometric variables the distribution of results around the arithmetic mean is not large. The exception is the measurement of subcutaneous lower leg skinfold (ALLSK) variables that exceeds the critical value (KV% $\leq 30\%$).

Table 1. Basic statistical indicators of anthropometric variables before Kangoo Jumps Exercise Treatment

Inicial	N	Min	Max	Mean	Std.Dev	St.Er	Skew	Kurt	Cv
ABOWE	20	58.1	79.3	67.88	5.8584	1.3106	0.143	-0.775	8.63
ACIUA	20	24	37.5	29.035	3.144	0.7034	0.867	1.386	10.83
ACICH	20	88	99	93.065	3.5347	0.7908	-0.018	-1.08	3.8
ACIUL	20	52	68.5	59.175	4.4716	1.0004	0.537	-0.282	7.56
ACILL	20	35	44	38.095	2.3496	0.5256	0.966	0.569	6.17
AUASK	20	15.5	30.2	22.82	4.59	1.0268	0.425	-1.129	20.11
ASUSK	20	11.9	31.1	19.5	5.3123	1.1884	0.351	-0.442	27.24
AABSK	20	10.1	40.3	24.41	7.0758	1.583	0.085	0.217	28.99
AULSK	20	27.9	60	40.63	9.7879	2.1897	0.203	-1.119	24.09
ALLSK	20	4.1	42	28.01	9.5108	2.1277	-0.663	0.772	33.95

Legenda: Mean - arithmetic mean, Std. Dev. - standard deviation, St.Er – standard error, Min - minimum result, Max - maksimalni rezultat, Skew - coefficient of asymmetry of the distribution of results and Kurt - elongation coefficient of the distribution of results, Cv - coefficient of variation

In the second part, the condition of the subjects in the second measurement (final condition) after the experimental treatment was analyzed .In table 2 , are presented basic statistical indicators of anthropometric variables after treatment exercises with Kangoo Jumps. Based on the asymmetry test values, most of the anthropometric variables applied show a symmetric distribution after treatment with Kangoo Jumps exercises (except for circumferential variables of the lower leg (ACILL, Skew = 1.039). Results obtained for most anthropometric variables (8 variables) are below the arithmetic mean because the asymmetry test is positive (epicuric) which means that the results obtained on these anthropometric variables are below the arithmetic mean. that the results obtained on these four anthropometric variables are above the arithmetic mean To verify the representativeness of the obtained arithmetic averages and to obtain more complete information on the sample, the statistical homogeneity of the statistical data was verified by statistical measures of variation, distribution of certain numeric values from the central values. Analyzing the values of the distribution parameters based on standard deviation (SD), minimum and maximum values, and coefficient of variation (KV%), it can be concluded that in most anthropometric variables the distribution of results around the arithmetic mean is not large . The exceptions are variables for measuring subcutaneous adipose tissue upper leg skinfold (AULSK) and lower leg skinfold (ALLSK) exceeding the critical value (KV% \leq 30%).

Table 2 . Basic statistical indicators of anthropometric variables after treatment with exercises Kangoo Jumps

Final	N	Min	Max	Mean	Std.Dev	St.Er	Skew	Kurt	Cv
ABOWE	20	50.6	72.6	59.905	5.8657	1.3122	0.291	-0.374	9.79
ACIUA	20	23	31	27.145	2.2421	0.5016	-0.157	-1.039	8.26
ACICH	20	83.8	93.8	88.975	2.8986	0.6485	-0.491	-0.493	3.26
ACIUL	20	47	63	54.525	4.1532	0.9291	0.442	-0.176	7.62
ACILL	20	34	44	37.225	2.5878	0.5789	1.039	1.041	6.95
AUASK	20	10.4	27	18.085	4.2387	0.9483	0.817	0.86	23.44
ASUSK	20	8.2	26.5	15.705	4.5229	1.0118	0.269	0.182	28.8
AABSK	20	10.5	29.5	18.605	4.7518	1.063	0.267	0.81	25.54
AULSK	20	2.2	40	25.765	10.7628	2.4078	-0.847	0.46	41.77
ALLSK	20	5.1	40	23.66	9.1472	2.0463	-0.526	0.086	38.66

Legenda: Mean - arithmetic mean, Std. Dev. - standard deviation, St.Er – standard error, Min - minimum result, Max - maksimalni rezultat, Skew - coefficient of asymmetry of the distribution of results and Kurt - elongation coefficient of the distribution of results, Cv - coefficient of variation.

Table 5 shows the differences between the tested anthropometric variables before and after Kangoo Jumps exercise. Processing of the results by Paired Samples Test analysis shows that in the variables: body weight (ABOWE) sig = 0.000; p <0.01, circumference of the upper arm (ACIUA) sig = 0.004; p <0.01, circumference of the chest (ACICH) sig = 0.000; p <0.01, circumference of the upper leg (ACIUL) sig = 0.000; p <0.01, circumference of the lower leg (ACILL) sig = 0.011; p <0.05, upper arm skinfold (AUASK) sig = 0.000; p <0.01, subscapular skinfold (ASUSK) sig = 0.003; p <0.01, abdominal skinfold (AABSK) sig = 0.000; p <0.01, upper leg skinfold (AULSK) sig = 0.000; p <0.01 a statistically significant difference was

obtained between the initial and final condition. In the lower leg skinfold (ALLSK) variable sig = 0.135; $p > 0.05$ did not show a statistically significant difference between the initial and final states.

Table 3 . Difference between arithmetic averages of anthropometric variables before and after Kangoo Jumps Exercise

		Mean	Std. Dev.	Std. Err.	Lower	Upper	t	df	Sig.
Pair 1	ABOWE - ABOWE	7.975	1.45199	.32468	7.29545	8.65455	24.563	19	.000
Pair 2	ACIUA - ACIUA	1.890	2.54246	.56851	.70009	3.07991	3.324	19	.004
Pair 3	ACICH - ACICH	4.090	1.77079	.39596	3.26125	4.91875	10.329	19	.000
Pair 4	ACIUL - ACIUL	4.650	1.60804	.35957	3.89741	5.40259	12.932	19	.000
Pair 5	ACILL - ACILL	.870	1.38188	.30900	.22326	1.51674	2.816	19	.011
Pair 6	AUASK - AUASK	4.735	3.95784	.88500	2.88267	6.58733	5.350	19	.000
Pair 7	ASUSK - ASUSK	3.795	4.93062	1.10252	1.48740	6.10260	3.442	19	.003
Pair 8	AABSK - AABSK	5.805	5.67928	1.26992	3.14702	8.46298	4.571	19	.000
Pair 9	AULSK - AULSK	14.865	12.37235	2.76654	9.07456	20.65544	5.373	19	.000
Pair 10	ALLSK - ALLSK	4.350	12.47315	2.78908	-1.48761	10.18761	1.560	19	.135

Legenda: Mean - aritmetik diferensial, Std. Dev. - standard deviation, St.Er - standard error, Lower - the lower the score, Upper - the upper the score, t - t-value, df-number-1, Sig- significant.

Discussion

Transformation that is the product of well-planned and planned activity (training) is a process by which changes in morphological characteristics are achieved as a result of subcutaneous adipose tissue depletion. The basic task of organized aerobic activity is to bring the subject of the female or male gender from an initial or initial state (Si) to a newly formed or final state (Sf), that is, to achieve morphologically adapted organism of the organism against the increasing burdens. The results obtained in the variables of body mass and body volume as well as subcutaneous adipose tissue in women who underwent aerobic training (Kangoo Jumps) indicate a statistically significant difference between baseline and final condition, except for the lower leg variable skinfold (ALLSK) sig = 0.135, as shown in Table 3. Results within this study show statistically significant changes in body mass and volume in the female population under the influence of the Kangoo Jumps fitness program. Certainly the reduction in body mass and volume has been done

on account of the reduction of subcutaneous adipose tissue and the maintenance of muscular body mass. Aerobic training with the Kangoo Jumps fitness program did not have the same effect on changes in adipose tissue by body regions in the female population, also this aerobic training shows a greater effect on decreasing subcutaneous adipose tissue in the abdomen region by 14.9 %. The research is consistent with research by other authors where they note that aerobic training with submaximal intensity affects the reduction of intra-abdominal fat in the female population (McTiernan et al., 2007). In longitudinal character research to be the most reliable results, the sample number must be greater. That is, one of the reasons for such changes is very likely the sample of respondents, lifestyle and nutrition, respondents with different body structure and different levels of conditioning preparation also prefer specific sources of food to offset energy (Charlot & Chapelot 2013). It should be borne in mind that the energy deficit caused by fitness training with submaximal intensity Kangoo Jumps exercises certainly responds to each female subject in different ways (King et al., 2007). The high intensity of aerobic activities and within a short period of time affects the positive changes, that is, the reduction of subcutaneous adipose tissue (Fan et al., 2013). The results obtained in this study indicate a negative association between exercise intensity and subcutaneous adipose tissue level, which is consistent with existing research, namely that increasing the intensity of high-intensity aerobic activities leads to a decrease in fat in the body (Coker et al., 2009). The results also show that aerobic training with Kangoo Jumps exercise, affecting the improvement of cardiovascular and respiratory function, has a positive effect on decreasing body fat in the female population aged 18-24. after two months of training with aerobic exercise (Stasiulis et al., 2010). Higher intensity training has shown good effects on lowering abdominal fat, and subcutaneous adipose tissue (Coker, 2009) and thus has the effect of preventing overweight (Gutin et al., 2002). Higher-intensity aerobic training is the most effective way to reduce body fat, which is consistent with research showing that lowering of subcutaneous adipose tissue is more pronounced in female populations in which it has been shown that their baseline condition indicated higher amounts of fat (Trapp et al., 2008). Obesity as a disease (WHO, 2000), in which body fat deposits are greatly increased to the extent that they cause health damage can be combated through aerobic-type physical activities where energy is used to perform these aerobic physical activities. the subcutaneous fat reserves of the organism.

Conclusion

Obesity arises from the influence of many factors, and analyzing and understanding these factors is very important in finding ways to improve lifestyle behaviors and reduce the risk of developing overweight and associated chronic diseases. One of the factors that lead to being overweight is consuming excess calories as opposed to eating them. From many different authors' research, but also from the results obtained from this research we can see that high intensity physical activity of aerobic character, respectively Kangoo Jumps fitness program has a significant impact on reducing overweight and body volume by decreased mass of subcutaneous adipose tissue. Aerobic physical activity also has a major impact on reducing overweight and is considered the most natural way of consuming energy and regulating body weight. Physical activity, especially that of the aerobic type, maintains the energy balance in the body, thereby

preventing the appearance of overweight by increasing fatty metabolism with the help of the hormonal system and reducing subcutaneous adipose tissue. The Kangoo Jumps high intensity music program with 128 - 135 bpm music is one of the most effective physical activity programs to reduce subcutaneous adipose tissue with this even overweight giving women a better exterior appearance.

References

1. Andrijašević, M. (2010). Kinesiological recreation. Zagreb: Faculty of Kinesiology, University of Zagreb.
2. Baretić, M. and Balić, S. (2002). Overweight and Obesity in Croatia. *Diabetologia Croatica* 31(2):105 – 112.
3. Branca, F. and Negru, L. (2005). The challenge of obesity in the WHO European Region.
4. Charlot, K., Chapelot, D. (2013): Energy compensation after an aerobic exercise session in high-fat/low-fit and low-fat/high-fit young male subjects. *British Journal Of Nutrition*, 110, 1133-1142.
5. Coker, R. H., Williams, R. H., Kortebein, P. M., Sullivan, D. H., Evans, W. J. (2009): Influence of Exercise Intensity on Abdominal Fat and Adiponectin in Elderly Adults. *Metabolic Syndrome and Related Disorders*, 7, 363-368.
6. Fan, J. X., Brown, B. B., Hanson, H., Kowalewski-Jones, L., Smith, K. R., Zick, C. D. (2013): Moderate to Vigorous Physical Activity and Weight Outcomes: Does Every Minute Count? *American Journal of Health Promotion*, 2, 41-49.
7. Gutin, B., Barbeau, P., Owens, S., Lemmon, C. R., Bauman, M., Allison, J., Kang, H. S., Litaker, M. S. (2002): Effects of exercise intensity on cardiovascular fitness, total body composition, and visceral adiposity of obese adolescents. *American Journal of Clinical Nutrition*, 75, 818-26.
8. Hunter, G., Bamman, M. M., Hester. (2000). Obesity – Prone Children Can Benefit from High – Intensity Exercise. *Strength Cond. J.* 22 (1): 51 – 54.
9. Inchley, J. and et al. (2016). Growing up unequal: gender and socioeconomic differences in young people's health and well-being. Health Behavior in School-age children (HBSC) study: International report from 2013/2014 survey. Copenhagen: WHO Regional Office for Europe.
10. King, N. A., Caudwell, P., Hopkins, M., Byrne, N. M., Colley, R., Hills, A. P., Stubbs, J. R., Blundell, J. E. (2007): Metabolic and Behavioral Compensatory Responses to Exercise Interventions: Barriers to Weight Loss. *Obesity*, 15, 1373-1383.
11. Kopelman P. (2007). Health risks associated with overweight and obesity. *Obesity reviews*, 8(Suppl. 1), 13-17.
12. McTiernan, A., Sorensen, B., Irwin, M. L., Morgan, A., Yasui, Y., Rudolph, R. E., Surawicz, C., Lampe, J. W., Lampe, P. D., Ayub, K., Potter, J.D. (2007): Exercise Effect on Weight and Body Fat in Men and Women. *Obesity*, 15, 1496 –1512.
13. NCD Risk Factor Collaboration (NCD-RisC) (2016). Trends in adult body-mass index in 200 countries from 1975 to 2014: a pooled analysis of 1698 population-based measurement studies with 19.2 million participants. *Lancet*, 387(10026), 1377-1396.
14. Stasiulis, A., Mockiene, A., Vizbaraitė, D., Mockus, P. (2010): Aerobic exercise-induced changes in body composition and blood lipids in young women. *Medicina (Kaunas)*, 46, 129-34.
15. Stasiulis, A., Mockiene, A., Vizbaraitė, D., Mockus, P. (2010): Aerobic exercise-induced changes in body composition and blood lipids in young women. *Medicina (Kaunas)*, 46, 129-34
16. Trapp, E. G., Chisholm, D. J., Freund, J., Boutcher, S. H. (2008): The effects of high intensity intermittent exercise training on fat loss and fasting insulin levels of young women. *International Journal of Obesity*, 32, 684–691.
17. World Health Organization (WHO) (2016a). Report of the commission on Ending childhood obesity /on line/. Retrieved August, 23, 2016.s: http://apps.who.int/iris/bitstream/10665/204176/1/9789241510066_eng.pdf.
18. World Health Organisation. Obesity: preventing and managing the global epidemic. WHO technical report series number 894. Geneva: World Health Organisation; 2000.