doi:10.5550/sgia.161201.en.KSCP
UDC: 796.41.015.1-055.2
COBISS.BH-ID: 6764056

ANALYSIS OF THE EFFECTS OF SIX-MONTH STEP AEROBICS PROGRAMME WITH FEMALE STUDENTS WHO TRAIN AND FEMALE STUDENTS WHO DO NOT HAVE ORGANISED PHYSICAL TRAINING

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Original scientific paper

SUMMARY

In a sample of 100 female students at the College of Nursing Studies of the University of Bihać, a six-months-long experiment was conducted with the aim of determining the differences between two groups, namely the one that practiced step aerobics twice a week and the other, control group, which had no organized physical training. The research topic is a longitudinal study on a sample of female students, through the prism of researching the efficiency of Step aerobics programme in the evaluation of selected anthropological characteristics, as well as through the process of valorization of this programme's effect on the anthropological status of female students compared to students who did not have an organized physical training. Based on t-test and discriminant analysis, it has been concluded that there are statistically significant differences between these two groups of students. The results show that there has been a change in the students of the experimental group in the initial and final measurement, which also reflected on the differences between the experimental and control groups. A single discriminant function that has very high statistical significance has been isolated. Based on these results, it can be confirmed that there was an improvement of results of morphological characteristics in female students, although they practiced only twice a week. It turned out that there was also a redistribution of body composition on account of improving the volume at the expense of adipose tissue.

Keywords: step aerobics, morphological characteristics

INTRODUCTION

Aerobics is a unique sport phenomenon and it is among the sports which emerged in the last 25 years. It originated in America and began to spread from the late 1970s and was intended for all age groups, (women at first) and later to all others. With aerobic exercise, we aim to increase the abilities that are defined as aerobic fitness in modern sport (Sharkey, 1991) in terms of aerobic power and aerobic capacity as an indicator of the ability of taking, transporting and utilizing oxygen. Mastering certain motoric programmes plays very important role in aerobics. Nowadays, it is known that the management of movements implies constant "communication" between the CNS and the peripheral system to perform the movement, and it corrects the movement together with peripheral inlet, whereby CNS plans, programmes and sends command to limbs (Mirkov, 2011). In aerobics, there is an infinite number of elements of movement and their combinations (Zagorc, 1996). Most of previous research dealing with functional, motoric and morphological characteristics of female students (Skender, 2002), as well as the impact of certain aerobics programmes (Đug &Mikić, 2007), are mostly about the positive impact of transformational programmes on a sample of subjects aged 19-21 years. Based on the presented results at the beginning and the end of the conducted fitness programme, i. e. step aerobics, over a period of two months with a frequency of 2 times a week, and on the basis of the importance of the changes which were tested with T-test, they concluded that the applied programme of step aerobics produced significant partial changes–effects– in a group of 21 students, when it comes to applied anthropometric variables. In a study, (Oreb, Blarežina & Gošnik-Oreb, 1997) determined that after the implementation of the three-month aerobic dance programme within the Physical Education classes lasting two hours a week, there is an exceptional utility of aerobic dance especially in improving rhythm, movement frequency, explosive strength and coordination. Another study (Đug, Mikić & Mačković, 2008) determined the level of tranformation processes of morphological characteristics as a result of the six-month programmed fitness among the students of first and second year, who attended the optional classes of fitness at the University of Tuzla. The research included 199 students at the age of 19-21. The TBC-total body condition fitness programme, which was conducted with another group of subjects, produced significant partial effects, namely the weight reduction and the reduction of subcutaneous adipose tissue, which is one of the main tasks of this fitness programme. Body structure (physique) is estimated so that the electrical signal passes more easily through the body parts that contain water (blood, urine, muscles) because they have better conductivity than through bones or adipose tissue. The greater the amount of non-adipose tissue, the greater conductivity and less resistance. Combining bioelectrical impedance with other factors such as height, weight, and age, we get information about the structure of body weight. (Nešić, Ostojić, Đokić & Šeper, 2012). With this research, we tried to determine the effects of the Step aerobics programme, with the aim of transforming some anthropological characteristics in female students at the subsidiary faculty of the University of Bihać.

The subject of this research can be defined essentially as a longitudinal study on the population of female students, through the prism of researching the efficiency of Step aerobics programme in the evaluation of selected anthropological characteristics, as well as through the process of valorization of this programme's effect on the anthropological status of female students compared to students who did not have an organized physical training.

The main goal of this research is to determine the effects of a six-month Step aerobics programme in some anthropological characteristics among students of the University of Bihać.

The secondary goal is to analyze the differences of effects of a six-month Step aerobics programme in some anthropological characteristics among female students of the University of Bihać and female students who did not have an organized physical exercise.

METHODS

The sample comprised of 100 students of the University of Bihać divided into two groups, one experimental and one control group. The experimental group (E), which followed the model of step aerobics, consisted of 50 students, and the control group (K) which was not subjected to an organized exercise programme, consisted of 50 students.
In studying anthropological characteristics of both groups' subjects, we used two batteries of tests to assess the following anthropological characteristics:

- AGE- Chronological Age
- AVIS- Body height– measured with Martin's anthropometer. A subject is on a firm, horizontal ground in an upright position. The head of the subject should be in such a position that the Frankfurt plane is horizontal. The subject straightens his/her back as far as possible, and puts feet together. The examiner stands on the subject's left side and makes sure that the anthropometer is placed directly along the back of the body and vertically, and then drops a metal ring – slider so that the horizontal plate reaches the patient's head. We read the result on the scale at the top part of triangular slot on the slider. The result is read with an accuracy of 0.1 cm.
- AMAS- Body mass is measured with a scale placed on a horizontal, solid surface. The subject stands barefoot and calm at the middle of the scale, until the figure is formed on the scale. The result is read with an accuracy of 0.1 kg.
- BMI- Body mass index – (estimated body weight) the ratio of height and weight
- BMR- Basal metabolic rate – the total energy that is released from the body to maintain the normal function of the motionless body such as respiration and circulation. (1kcal = 4.184 kJ)
- RESISTANCE- Impedance measures present physical resistance to electrical current. Muscle acts as a conductor of electricity, and adipose tissue acts as a resistor.
- FAT % - a percentage of fat
- FAT MASS- a total mass of fat (kg, lb) in a body
- FFM-fat free mass. A mass of released fat composed of muscles, bones, tissue, water and other fat-free mass in the body.
- TBW - total body water. The total mass of water in the body is the amount of water expressed in lb, kg, or st.lb, which is found in the body. TBW makes from 50% to 70% of total body weight.

The sample of variables for assessing body composition were measured using body composition monitor model TANITA BC-540 has been used to measure body composition. This device, in the form of portable scales, uses installed software to measure the bioelectric impedance and body weight, and then, based on the measured data and the entered parameters (gender, age, body height) calculates the percentage of fat content in the structure of body composition, muscle mass in kilograms, a percentage of water in body structure, so called physical rating (on a scale 1-9), basal metabolic rate (BMR) in kilocalories and joules, metabolic age and weight of bones.

In data processing, only three variables (the percentage of fat, muscle mass and percentage of water) are taken into consideration as the most important for research.

The sample of variables for evaluation of morphological characteristics: (Skender, 2008.)

AOBGRU – chest width
AOBNAD - scope of the upper arm
AOBTRB - scope of the stomach
AOBNAT - scope of the upper thigh
ANABTR - abdominal skinfold
ANABNAD - upper arm skinfold
ANAB - back skinfold

The following measuring instruments were used to anthropometric characteristics: Martin's anthropometer with precision scale of 0.1 cm, 1500-milimeter-long Centimeter tape, caliper.
Measurements of morphological characteristics are measured according to the IBP (International Biological Program). The measurements were performed using a centimeter tape. Skin folds were measured with calipers. The measurements were performed in the morning in the initial and final measurements. The measurements were performed by the same measurer to reduce potential errors in the measurement to a minimum.
The measurement results were analyzed by the statistical programme SPSS 17. After checking the normality of distribution, it has been determined that the data have a normal distribution, and T-test and discriminant analysis have been made.
The subjects in the experimental group practiced Step aerobics programme which was full of aerobic exercises for at least 60 minutes, twice a week over a period of six months. The structure of movements in Step aerobics refers to the constant changes of rhythm and tempo as well as changes in energy consumption by using a stepper.
The subjects who practiced STEP aerobics programme performed the movements which consisted of numerous jumps, leaps, steps and turns which are connected into one entity in the form of choreography that looks like a modern dance, and after each choreography, they conducted shaping exercises that are performed for individual muscle groups.

RESULTS

Table 1. Descriptive statistics of all variables on initial measurement in both groups of respondents

grupe	Varijable	N	Mean	SD	KS test
E	AVISTJ	50	164,50	5,79	0,23
	AMASTJ	50	59.64	10,29	0,58
	BMI	50	21.78	3,83	0,19
	BMR	50	6049.68	426,42	0,26
	OTPOR	50	597.32	69,92	0,31
	FAT%	50	15.53	7,46	0,87
	FAT MASS	50	44.09	3,25	0,40
	FFM	50	32.28	2,37	0,36
	TBW	50	84.97	6,48	0,39
	AOBGRU	50	24.48	2,91	0,54
	AOBNAD	50	74.37	8,34	0,28
	AOBTRB	50	50.80	4,71	0,65
	AOBNAT	50	1,76	0,61	0,91

	ANABTR	50	1,58	0,48	0,32
	ANABNAD	50	1,20	0,52	0,12
	ANABLE	50	1,20	0,52	0,45
K	AVISTJ	50	164,32	5,06	0,28
	AMASTJ	50	61,17	10,05	0,65
	BMI	50	21,84	5,47	0,91
	BMR	50	6085,76	414,62	0,32
	OTPOR	50	572,38	106,82	0,12
	FAT%	50	16,19	7,68	0,45
	FAT MASS	50	44,38	3,57	0,87
	FFM	50	32,48	2,60	0,40
	TBW	50	84,73	6,42	0,36
	AOBGRU	50	24,70	2,89	0,39
	AOBNAD	50	75,32	7,58	0,65
	AOBTRB	50	50,95	5,20	0,91
	AOBNAT	50	1,85	0,55	0,32
	ANABTR	50	1,57	0,47	0,12
	ANABNAD	50	1,28	0,59	0,45
	ANABLE	50	1,28	0,59	0,57

Table 2. Descriptive statistics of all variables on the final measurement in both groups of respondents

grupe	Varijable	N	Mean	SD	KS test
E	AVISTJ	50	165,54	5,79	0,65
	AMASTJ	50	59,81	10,88	0,91
	BMI	50	20,60	4,21	0,32
	BMR	50	5917,00	452,63	0,12
	OTPOR	50	559,00	56,84	0,45
	FAT%	50	22,95	7,85	0,57
	FAT MASS	50	44,15	3,48	0,12
	FFM	50	32,35	2,55	0,45
	TBW	50	86,10	6,89	0,28
	AOBGRU	50	25,20	3,26	0,65
	AOBNAD	50	68,00	6,86	0,91
	AOBTRB	50	52,45	5,13	0,32
	AOBNAT	50	1,54	0,64	0,12
	ANABTR	50	1,54	0,64	0,45
	ANABNAD	50	1,28	0,47	0,87
	ANABLE	50	1,27	0,59	0,28
K	AVISTJ	50	164,32	5,06	0,65
	AMASTJ	50	61,79	9,90	0,91
	BMI	50	22,97	3,80	0,32
	BMR	50	6109,46	407,30	0,12
	OTPOR	50	543,06	64,53	0,45
	FAT%	50	25,32	6,69	0,12
	FAT MASS	50	45,65	3,53	0,45
	FFM	50	33,42	2,58	0,28
	TBW	50	88,74	6,27	0,65
	AOBGRU	50	26,48	3,34	0,91
	AOBNAD	50	72,40	7,56	0,32
	AOBTRB	50	54,26	5,23	0,12
	AOBNAT	50	1,76	0,58	0,45

	ANABTR	50	1,76	0,58	0,87
	ANABNAD	50	1,28	0,47	0,28
	ANABLE	50	1,27	0,59	0,65

As part of this analysis, we determined statistical significances of differences of applied variables before and after the realization of the STEP programme. Table 3 shows the values of T- test of the dependent sample for determining statistical significance in morphologic characteristics and body composition. For a better understanding of the table, variables are marked in the different time points by adding the suffix I for the initial measurement at the end and the suffix F for the final measurement.

The analysis of Table 3 revealed statistically significant changes in the following variables of morphological characteristics: impedance, fat free mass, total body water, volume of the chest, volume of the upper arm, volume of the stomach, upper thigh and skin fold back.

Table 3.T-test in the area of morphological characteristics and body composition of the experimental group E2 in the initial and final measurement

	Mean	Std. Deviatic	Std. Error Mean	95% Confidence Inte		t	df	Sig. (tail)
				Upper	Lower			
AMASI - AMASF	-,64898	2,38049	,34007	-1,33274	,03478	-1,908	48	,062
BMII - BMIF	-1,1280	4,42512	,62581	-2,38560	,12960	-1,802	49	,078
BMRI - BMRF	-23,700	99,9435	14,13415	-52,10363	4,70363	-1,677	49	,100
OTPORI- OTPORF	29,320(	91,2170	12,90004	3,39640	55,24360	2,273	49	,027
FATPROI - FATPROF	,67000	3,72626	,52697	-,38899	1,72899	1,271	49	,210
FATMASI-FATMASF	-,10200	2,65756	,37584	-,85727	,65327	-,271	49	,787
FFMI-FFMF	-1,2660	1,17606	,16632	-1,60023	-,93177	-7,612	49	,000
TBWI - TBWF	-,93600	,85589	,12104	-1,17924	-,69276	-7,733	49	,000
AOBGRUI - AOBGRUF	-4,0100	4,40682	,62322	-5,26241	-2,75759	-6,434	49	,000
AOBNADI - AOBNADF	-1,7720	1,40117	,19816	-2,17021	-1,37379	-8,942	49	,000
AOBTRBI-AOBTRBF	2,9160(	6,80952	,96301	,98076	4,85124	3,028	49	,004
AOBNATI-AOBNATF	-3,3100	3,17749	,44936	-4,21303	-2,40697	-7,366	49	,000
ANABTRI-ANABTRF	,08800	,46979	,06644	-,04551	,22151	1,325	49	,191
ANABNADI - ANABNADF	-,03360	,33154	,04689	-,12782	,06062	-,717	49	,477

ANABLEI-ANABLEF	,15040	,45446	,06427	,02124	,27956	2,340	49	,023

Table 4. T-test in the area of morphological characteristics and body composition of the experimental and control group Initial measurement

	Mean	Std. Dev	Std. Err Mean	95% Confid Inte. of the Dif.		t	df	Sig. (2-tai)
AMAS	-2,0606	8,09297	1,40881	-4,9302	,80904	-1,463	32	,153
BMI	-1,12800	4,42512	,62581	-2,3856	,12960	-1,802	49	,078
BMR	-23,70000	99,94350	14,13415	-52,103	4,7036	-1,677	49	,100
OTPOR	1,73939	9,14730	1,59234	-1,504	4,9828	1,092	32	,283
FATPRO	,67000	3,72626	,52697	-,38899	1,7289	1,271	49	,210
FATMAS	-,10200	2,65756	,37584	-,85727	,65327	-,271	49	,787
FFM	-1,12800	4,42512	,62581	-2,3856	,12960	-1,802	49	,078
TBW	-23,70000	99,94350	14,13415	-52,103	4,7036	-1,677	49	,100
AOBGRU	1,17879	4,23916	,73794	-,324	2,6819	1,597	32	,120
AOBNAD	1,73939	9,14730	1,59234	-1,504	4,9828	1,092	32	,283
AOBTRB	1,17879	4,23916	,73794	-,324	2,6819	1,597	32	,120
AOBNAT	-2,0606	8,09297	1,40881	-4,9302	,80904	-1,463	32	,153
ANABTR	-1,12800	4,42512	,62581	-2,3856	,12960	-1,802	49	,078
ANABNAD	,21121	,89753	,15624	-,1070	,5294	1,352	32	,186
ANABLE	-,04152	,74377	,12947	-,3052	,2222	-,321	32	,751
AMAS	-,10200	2,65756	,37584	-,85727	,65327	-,271	49	,787

Table 5 shows the differences between the experimental and control groups in the morphological characteristics and body composition. The values of the differences in the following variables have been determined: body weight, body mass index, basal metabolic rate, resistance, fat percentage, total weight of fat mass (in kg, lb) in a body, fat free mass, total body water, back skinfold, scope of the upper thigh, and abdomenal scope.

The difference in morphological dimension of body weight is especially significant, with statistically significant difference of 0.5%. If we analyze the variables of the body structure, the total weight of fat mass (in kg, lb) in a body and fat free mass, we see that they also showed statistically significant differences in these groups of subjects, especially because they are a part of body mass, as well as subcutaneous adipose tissue.

Table 5. T-test in the area of morphological characteristics and body composition of experimental and control groups

	Mean	Std. Dev	Std. Err Mean	95% Confid Inte. of the Dif.		t	df	Sig. (2-tai)
AMASI - AMASF	-2,0606	8,09297	1,40881	-4,9302	,80904	-1,463	32	,153
BMII - BMIF	6,34242	12,38901	2,15665	1,9494	10,735	2,941	32	,006
BMRI - BMRF	2,89697	4,26889	,74312	1,3832	4,4106	3,898	32	,000
OTPORI- OTPORF	253,181	522,873	91,02064	67,778	438,58	2,782	32	,009
FATPROI - FATPROF	-35,121	91,64598	15,95352	-67,61	-2,624	-2,201	32	,035
FATMASI-FATMASF	4,80303	8,99908	1,56654	1,6121	7,9939	3,066	32	,004
FFMI-FFMF	4,60606	8,40992	1,46398	1,6240	7,5880	3,146	32	,004
TBWI - TBWF	1,77576	4,62264	,80470	,1366	3,4148	2,207	32	,035
AOBGRUI - AOBGRUF	1,30000	3,39273	,59060	,0969	2,5030	2,201	32	,035
AOBNADI - AOBNADF	1,73939	9,14730	1,59234	-1,504	4,9828	1,092	32	,283
AOBTRBI-AOBTRBF	1,17879	4,23916	,73794	-,324	2,6819	1,597	32	,120
AOBNATI-AOBNATF	5,02727	10,84811	1,88841	1,180	8,8738	2,662	32	,012
ANABTRI-ANABTRF	2,79091	6,54529	1,13939	,470	5,1117	2,449	32	,020
ANABNADI - ANABNADI	,21121	,89753	,15624	-,1070	,5294	1,352	32	,186
ANABLEI-ANABLEF	-,04152	,74377	,12947	-,3052	,2222	-,321	32	,751
AMASI - AMASF	,20939	,57657	,10037	,0049	,4138	2,086	32	,045

In this subsection, we have analysed the quantitative morphological changes in the experimental group E (a group that practiced STEP aerobics) after completing six-month programme. Analysis of Table 3 shows that this area underwent quantitative changes. There has been a formation of an

important discriminative function of height, .776 which indicates very high statistical significance of 0.01%, a very high coefficient of significance.

Table 6. The significance of isolated discriminant functions of morphological characteristics and body composition in the experimental group's initial and final measurements

Function	Eigenvalue	% of Varia	Cumulative %	Canonical Correlation	Wilks' Lamb	Chi-squar	df	Sig.
1	1,513(a)	100,0	100,0	,776	,398	86,163	9	,000

Table 7. The structure of discriminant function

	1
AOBNAT	,255
AOBGRU	,253
AOBNAD	,227
OTPORI(a)	-,205
AOBTRB	-,155
FFM(a)	,145
TBW	,145
ANABLE	-,116
AVIS(a)	-,085
FATPRO(a)	-,059
ANABNAD(a)	,052
ANABTR(a)	,042
FATMAS(a)	-,034
AMAS	,031
BMR(a)	,027
BMI(a)	,005

Table 8. Centroids of groups

group	Function
	1

1,00	-1,246
2,00	1,246

This subsection analyzes the quantitative changes of morphological characteristics between the experimental group E and the control group K after completing the programme, keeping in mind that the experimental group completed a six-month programme of step aerobics while the control group did not have an organized physical exercise. The analysis of Table 9 indicates that morphological area in most subjects has undergone significant quantitative changes, as it was expected. We see that there has been the formation of an important function .633 which indicates the correlation between the set of data from which we conducted discriminant analysis and the discriminant function. The statistical significance of this canonical correlation is 0.01%, indicating a very high bond.

Table 9**.** The significance of isolated discriminant functions

Function	Eigenvalue	% of Var	Cumulative	Canonical Correlation	Wilks' La	Chi-squ	df	Sig.
1	,754(a)	100,0	100,0	,656	,570	41,578	14	,000

Table 10.The structure of discriminant function

	Function
	1
BMI	-,441
FATMAS(a)	-,434
FATPROC	-,428
AMAS	-,422
BMR	-,404
AOBTRB	-,348
FFM	-,341
TBW(a)	-,339
AOBNAT	-,307
OTPOR	,281

ANABLE	-,269
ANABTR	-,215
AOBNAD	-,185
AOBGRU	-,172
ANABNAT	,118
AVIS	,073

Table 11.Centroids of groups

group	Function
	1
1,00	-,697
2,00	1,056

DISCUSSION

Considering the research results for the experimental group, it can be said that statistically significant differences have been achieved under the influence of the STEP programme, which is evident from Table 3 and 5. The achieved differences are significant in 8 variables of morphological characteristics and body composition. The analysis of Table 7 (the structure of discriminant function) shows that the tests of AOBNAT, AOBGRU and AOBNAD have the biggest contribution to the discriminant function. The subjects who practiced STEP aerobics programme in the experimental group performed the movements which consisted of numerous jumps, leaps, steps and turns which are connected into one entity in the form of choreography that looks like a modern dance, and after each choreography, they conducted shaping exercises that are performed for individual muscle groups. The effects of step workout are: strengthening the leg muscles and lower back, muscle tension and increasing the vitality of the entire organism. After analyzing the programme, we see that the subjects practiced for one hour 2 times a week. For these reasons, there have been significant changes of this morphological manifestation and the results of this discriminant function showed that the step programme statistically had a significant effect on improving the dimension of body volume, namely chest width, scope of upper thigh, and scope of upper arm. In Table 8 that shows the centroids of groups, it can be seen

there is a clear polarization of results in the initial and final measurements, as well as in the previous group, only in lower intensity.

We can conclude that the programme has significantly influenced the redistribution of fat, voluminosity and scope of the skeleton, adiposity among the female students of the experimental group. The reason can be found in the programme performed by the students of the experimental group. The programme of Step aerobics that has been conducted twice a week for six months was full of aerobic exercise which lasted at least 60 minutes. The structure of the movement in Step aerobics refers to the constant changes of rhythm and tempo as well as changes in energy consumption by using a stepper. The subjects who practiced STEP aerobics programme performed the movements which consisted of numerous jumps, leaps, steps and turns which are connected into one entity in the form of choreography that looks like a modern dance, and after each choreography, they conducted shaping exercises that are performed for individual muscle groups. The effects of step workout are: strengthening the leg muscles and lower back, muscle tension and increasing the vitality of the entire organism.

Table 5 indicated there are statistically significant differences between the two groups (experimental and control). The discriminant analysis revealed one discriminant function that has a very high statistical significance.

The analysis of Table 10 which shows the structure of discriminant function, indicates that the variables AMASTJ, AOBTRB, AOBNAT, ANABLE i ANABTR gave the greatest contribution to discriminative function.

This is because movements in Step aerobics programme performed by the subjects in this experimental group significantly strained muscles of lower limbs, among other things, and the results are reflected in the back skinfold and abdominal skinfold. The movements performed in step aerobics significantly strain the muscles of the abdomen as in the various movements of vertical or horizontal climbing, stomach muscles play an important role and are continuously active. Of course the programme reflected on mass reduction in the experimental group, which is a direct result of the Step aerobics programme. This is to confirm that the Step aerobics programme, as aerobic exercise, significantly influenced on the reduction of mass and

subcutaneous fat, as well as abdominal scope in the experimental group, which is the goal of aerobics. This observation is confirmed by the group centroids that show the difference in gender and large distance between groups. The control group did not have any organized programme, but we could not influence or control their free time completely. Yet, the results of discriminant analysis showed that these four variables made the greatest discrimination between these two groups.

Based on the results obtained in this study, we can confirm that the step aerobics had a very significant effect on the improvement of morphological characteristics among students of the University of Bihać. Although they practiced only twice a week, it turned out that a significant effect has been achieved in the majority of variables of the morphological area, and that the redistribution of body composition was performed with the aim of improving the volume at the expense of adipose tissue. The results in motor skills would probably show significantly better results, but unfortunately we did not research that in this paper.

CONCLUSION

Results we obtained in the research applied to a sample of 100 subjects of the student population at the University of Bihać speak in favor of the fact that step aerobics is very suitable form of activity and sport appropriate to this age. T-test indicated the difference between arithmetic means of the experimental and control groups in almost all the characteristics of morphological traits and body composition. The results of discriminant analysis indicate that one discriminant function of very high significance singled out. Also, analyzing the disparities between the initial and final measurements in the experimental group, it became apparent that the programme has caused significant statistical changes in the domain of most morphological characteristics and some variables of body structures. This speaks in favor of a claim that there has been a redistribution in body composition in favor of the creation of muscles in relation to the amount of fat, which was caused by the programme full of aerobic exercise, various kinds of jumps, leaps and steps. This study confirmed that step aerobics is a very important sport that should be practiced in student age.

Female students are burdened with lectures, classes and studying, which certainly reflects negatively on their morphological characteristics, and thus on the structure of the body composition, as well as on other anthropological characteristics.

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Received: 23.06.2017.
Accepted: 26.06.2017.

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