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IMPACT OF LEGS X DEFORMATION IN MORPHOLOGICAL DEVELOPMENT WITH WOMEN

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МУСА СЕЛИМИ, АБДУЛА ЕЛЕЗИ, НАЗИМ МИРТАЙ. ВЪЗДЕЙСТВИЕ НА X ДЕФОРМАЦИИТЕ НА КРАКАТА ВЪРХУ МОРФОФУНКЦИОНАЛНОТО РАЗВИТИЕ НА ЖЕНИТЕ

The purpose of this research was to ascertain the impact of the deformities of legs X of morphological development with women. For this purpose, thirty five students with X leg deformation and thirty five students without the deformation (Seventy altogether) aged 18 and 19 have been included.
There have been15 anthropometric variables applied, three longitudinal dimensions variables, four variables from bodily volume dimensions, three variables from transversal dimension and five variables of under-skin fold dimensions. Anthropometric measurements were performed according the International Biological Program (IBP).
Results show that the deformations of the leg X with women have significant impact on morphological development. This effect is manifested as a result of reduction of the leg muscle endurance as the main factor to perform physical activities, then getting as many calories as possible and their insufficient consume as a result of insufficient movement.

Keywords: anthropometric variables, X leg, students, International Biological Program (IBP).

INTRODUCTION

Health and physical development of young people is one of the main tasks of a modern society, because it represents the essence of biological, social and cultural progress. Physical development can be understood as morphological and physiological complex and its mutual connection with the biotic environmental human and social factors [1]. All the processes that define the physical development are correlatively dependent with different actions of various endogenous and exogenous factors.

In order to understand the principle of physical development in terms of the mutual action of external and internal environment factors and study its dynamics means to be able to concurrently intervene in terms and create the conditions for a natural development as good as possible for each individual.

Considering the morphological characteristics, the strength of the leg muscle plays a big role. Knee deformities affect the functional state of the locomotors apparatus, in fact reduction of the lower limb muscle strength. The roles of the legs are to performing different movements, so that their muscle weakness has a direct impact on physical activity and reduction in lifestyle. This way of life is characterized by a decrease of the ability to move and taking to many calories

that can be a source of many diseases. Because of the increased number of sick people from various diseases due to inactivity, overweight for all ages is bad [14]. This is, preliminary caused by taking calories as fat and carbohydrates and their insufficient consume due to the reduction of body movement. It is known that human morphological space has many dimensions and there were many attempts to study this [2][3].

Aim of research

Purpose of this research is to ascertain impact of legs deformities, in fact deformities of the legs X in morphological development with women.

Hypothesis of the research

Morphological development depends not only on external and internal biotic and social factors but also on deformities of X leg that indirectly has an impact on reducing of leg muscle stability as the main factor for the performance of physical activities.

METHODS OF WORK

Samples of students

To select a sample of 35 tested candidates with X legs deformities 2106 female students have been included in the research of five middle schools in Gjilan, such as; „Asllan Elezi", „Mehmet Isai", „Arbëria", „Marin Barleti" and Gymnasium „Zenel Hajdini." In this research, 35 female students aged 18 to 19 with X feet deformities and 35 without deformities have been included so far.

The sample of variables

In the research, 15 anthropometric variables have been applied according to the International Biological Program (IBP): Body height (ABH), length of the plantar (ALP), length of the leg (ALL), body weight (ABW), chest circumference (ACCH), arms circumference (ACA), lower leg circumference (ACLL), bicrystal span (ABS), diameter of the elbow (ADE), diameter of the knee (ADK), back skin fold (ASB), arm skin fold (ASA), abdomen skin fold (ASAB), thigh skin fold (ASTH) and shank skin fold (ASSH).

Measurement leg X is done with the millimetric ruler and the width between the feet joints, namely bimaleolar width 5 cm (width bimaleolar medial 5cm) standing position, has been measured. For each anthropometric variable the following values have been calculated: 1 Central core parameters and distribution, 2. Distribution curve has been tested through asymmetry coefficient ("skewness"), and height of distribution through extension coefficient ("kurtosis"). 3. To determine whether there were differences in arithmetic

averages between two the groups of children with and without deformities of legs in anthropometric parameters T-test (paired sample T-test) has been applied. Analyses were conducted by SPSS 8.0 program

RESULTS AND DISCUSSION

Sample group with deformities of legs X consists of 35 women aged 18 and 19 years old. The results of the basic central, statistical and dispersive parameters are presented in table 1. Coverage of basic descriptive statistical parameters in women with leg X deformities shows that anthropometric variables applied in this paper, just the under-knee perimeter has a deviation from normal distribution. Asymmetry of this variable is negative, indicating that the results lean towards lower values directions. The smallest number of anthropometric variables leans towards the higher values, which show their epicurtic asymmetries. Researches of the degree of bending of the tip of the curve, represents the graph of frequency distribution functions, which means extension analysis or flattening (kurtosis – Kurt). It is obvious that most of the variables have distributions results close to the normal, mesokurtik distribution.

Table 1. Central parameters and anthropometric variables distribution in women with deformities of legs X.

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
ABH	35	153.10	175.30	164.6686	5.7998	-.154	-.974
ALP	35	22.50	25.40	23.9886	.7231	-.315	-.252
ALL	35	80.40	105.20	93.7143	5.4905	.283	.236
ABW	35	54.10	70.50	65.4543	4.4317	-.682	.274
ACCH	35	79.10	98.30	89.5000	3.4038	.100	2.944
ACA	35	20.20	29.70	25.4800	2.0709	-.227	-.127
ACLL	35	31.20	37.80	36.1486	1.9161	-1.200	.480
ABS	35	23.50	30.20	27.7229	1.4512	-.638	.800
ADE	35	5.20	7.20	6.2943	.5104	.146	-.430
ADK	35	8.10	11.10	9.4800	.7029	.191	.024
ASB	35	10.20	27.90	20.2857	5.3615	-.033	-1.066
ASA	35	11.70	23.70	16.8771	2.8353	.167	-.156
ASAB	35	14.10	34.20	27.1829	7.0257	-.369	-1.387
ASTH	35	20.20	35.10	29.5514	3.9370	-.408	-.061
ASSH	35	11.80	30.10	24.1000	5.5159	-.752	-.450

Table 2. Central and distribution parameters of anthropometric variables with women with and without legs X deformities.

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
ABH	35	152.20	181.20	165.5400	6.8419	.119	-.350
ALP	35	21.90	25.30	23.3400	.9375	.674	-.530
ALL	35	82.10	101.10	92.3343	5.2775	-.232	-.790
ABW	35	51.10	75.60	61.1743	6.0906	.499	-.431
ACCH	35	79.20	97.40	87.5000	3.8038	.587	.734
ACA	35	21.60	29.20	25.2829	1.9628	.202	-.620
ACLL	35	31.50	39.40	35.2143	1.8318	.263	-.327
ABS	35	22.80	30.50	26.9943	1.8854	-.473	-.133
ADE	35	5.10	7.10	5.9257	.4901	.242	.103
ADK	35	6.90	10.20	8.7886	.7194	-.044	.056
ASB	35	8.60	23.40	12.7314	3.6335	1.412	1.748
ASA	35	6.50	26.40	13.5657	5.1007	.437	-.464
ASAB	35	7.60	27.20	16.1429	4.5987	.654	-.244
ASTH	35	13.20	29.40	22.5171	3.9939	-.155	.159
ASSH	35	10.30	26.20	17.8371	3.7377	.092	-.406

Unlike table 1, where the asymmetries of the majority of these variables are negative, it indicates that the results become lower, but in table 2 is the opposite. Asymmetries of the majority of these variables are positive, which means that the results are higher. Unlike table 1, where the asymmetries of the majority of these variables are negative, it means that the results go down, but in table 2 is the opposite. Asymmetries of the majority of these variables are positive, indicating that the results are higher. Out of morphological variables applied in this paper, only one is deviation from the normal distribution, which is the back skin fold. Based on previous research in the field of skin fold with non-homogeneous groups similar results have been obtained. Almost all variables that are used to determine the level of morphological development, it is seen a kind of platicurtic view of flattening – the top of the curve results.

To determine whether there is a statistically significant difference between the arithmetic average morphological parameters between women without and with deformities of legs X, the T-test for two independent groups have been applied. The following results show that the difference between the two groups of women without and with deformities of legs X it exists in the most of morphological variables (ALP). (Mean-64; t-3.33; df-34; sig-.002), ABW (Mean 4.28; t 3.56; df 34; sig-.001), ACCH (Mean 2.00; t 2.62; df 34; sig-.010), ACLL (Mean .93; t-2.20 ; df 34; sig-.035), ADE (Mean-.36; t 3.20; df 34; sig-.003), ADK (Mean-69; t 4.20; df 34; sig. 00), ASB (Mean-7.55; t 6.70; df 34; sig-.00), ASA (Mean 3.31; t 3.13; df 34; sig-.004), ASAB (Mean-11.04; t

-7.14; df 34; sig-.00), ASTH (Mean-7.03; t 6.74; df 34; sig-.00), ASTH (Mean-6.26; t 4.91; df 34; sig. 00).

Table 3. Differences in arithmetic average with anthropometric variables among women with and without legs X deformities.

Variables	F	Sig.	t	df	Sig. (2-tailed)	Mean	Std. Error	Lower	Upper
ABHX-N	.900	.346	-.575	68	.567	-.87143	1.51610	-3.89677	2.15391
ALPX-N	**2.588**	**.112**	**3.241**	**68**	**.002**	**.64857**	**.20012**	**.24923**	**1.04791**
ALLX- N	.026	.873	1.072	68	.287	1.38000	1.28728	-1.18872	3.94872
ABWX-N	**5.329**	**.024**	**3.362**	**68**	**.001**	**4.28000**	**1.27319**	**1.73940**	**6.82060**
ACCHX-N	**2.006**	**.161**	**2.318**	**68**	**.023**	**2.00000**	**.86280**	**.27831**	**3.72169**
ACAX-N	.505	.480	.409	68	.684	.19714	.48230	-.76526	1.15955
ACLLX-N	**.130**	**.720**	**2.085**	**68**	**.041**	**.93429**	**.44807**	**.04018**	**1.82839**
ABSX-N	2.115	.150	1.812	68	.074	.72857	.40216	-.07392	1.53107
ADEX-N	**.150**	**.700**	**3.081**	**68**	**.003**	**.36857**	**.11961**	**.12989**	**.60726**
ADKX –N	**.145**	**.704**	**4.067**	**68**	**.000**	**.69143**	**.17000**	**.35220**	**1.03066**
ASBX- N	**7.719**	**.007**	**6.900**	**68**	**.000**	**7.55429**	**1.09476**	**5.36972**	**9.73885**
ASAX-N	**12.811**	**.001**	**3.357**	**68**	**.001**	**3.31143**	**.98642**	**1.34306**	**5.27980**
ASABX-N	**15.560**	**.000**	**7.778**	**68**	**.000**		**1.41935**	**8.20773**	**13.87227**
ASTHX-N	**.001**	**.969**	**7.421**	**68**	**.000**	**7.03429**	**.94795**	**5.14269**	**8.92588**
ASSHX-N	**7.581**	**.008**	**5.561**	**68**	**.000**	**6.26286**	**1.12625**	**4.01546**	**8.51025**

X = with deformities
N = without deformity

Since the difference in arithmetic average were in favor of women with deformities of legs X, the T-test results are shown on table 3, which in degrees of freedom (df) from 34 were important in level p < 01 (Sig. (2-tailed), despite one that has been in level p < 05.

Variable, with no important statistical difference mostly belong to the longitudinal dimensions, despite the arm performance (ACA) and bicrystal span (ABS).

The obtained results show that based on morphological dimension, mostly the body volume dimension and the under skin-fold match the different factors which are important for the maintenance and body stability. All processes that define the physical development are conditioned with mutual action of different endogenous and exogenous factors.

Since deformation of legs X, medial epicondils of tibia and femur are voluminous and push the spinal inside and compensatory removal of legs, they enable normal movement and cause knee and muscle pain during long period standing on feet. This obliges an individual to be adopted on these conditions, which are as a result of this deformity followed with decrease of activity, taking of many calories and insufficient consuming of them due to the lack of movements.

Physical activities, with dominated aerobe activity, keep their energetic balance in their body and herewith they prevent overweight [12]. However, life like that shows changes in the individual morphological characteristics. Researches certify the presented hypothesis where it is said that morphological development depends not only on internal and external biotic and social factors but also on legs deformation X , which indirectly have an impact on legs muscle stability decrease which play the key role in body activities.

CONCLUSION

In this distinctive transversal research, differences between the two groups within the variable area have been analyzed in order to assess the morphological features with women with and without legs X deformities aged 18 and 19. Results show that deformations of legs X has a significant impact with women on their morphological development. This effect is manifested as a result of the reduction of leg muscle stability, which plays the main role in physical activities.

Results of the research show that there have been changes in the structure of morphological characteristics among women in terms of under-skin fold and body volume increase and that there were no changes in body height. Women with legs X deformities should increase their kinesiology activities, along with specific exercises to increase their leg muscle strengthening. Despite this, overdose food calories should be taken into consideration.

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Резюме на български език

Целта на това проучване е да се установи влиянието на Х деформациите на крака върху морфологичното развитие на жените. За тази цел са изследвани тридесет и пет студенти с Х деформации и тридесет и пет студенти без (общо седемдесет) на възраст между 18 и 19 г.
Прилагат се 15 антропометрични променливи, три надлъжни променливи размери, четири променливи от обема за телесни размери, три променливи от пресечна точка и пет променливи характеристики по кожна гънка размери. Антропометричните измервания бяха проведени съгласно Международната биологична програма (IBP).
Резултатите показват, че Х деформациите на краката при жените имат значително влияние върху морфологичното развитие. Този ефект се проявява в резултат на намаляване на мускулната издръжливост на краката като основен фактор за извършване на физическа активност.

Ключови думи: антропометрични променливи, Х деформация на краката, студенти, международна биологична програма (IBP).

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