13 - RELATIONSHIP BETWEEN SELECTED SOMATIC PARAMETERS AND SOCIO-CULTURAL CHARACTERISTICS OF CZECH ADULT POPULATION

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INTRODUCTION

Socio-demographic analysis show in Europe and also in Czech Republic that quantity and also the quality (intensity) of sport activity among adult population are insufficient as a whole. It was shown (Eurobarometer, 2004) that adult men exercise more than women. In 2004 41% of men claimed that they play sport at least once a week, but women stated only 35%. Regarding age the situation shows that frequency decreases as the age category rises; from 60% in age 15 – 24 it falls to 28% in age over 55 years. The practice of sports is directly linked to the level of education; the more years a men was attending school, the more time is devoting the sport and movement activities. Neither the fee nor the lack of facilities prevents Europeans from doing some sports activity. It is more due to the constraints of the typical way of life in modern society (lack of time due to professional activities or family responsibilities), which prevent citizens of the Union from playing sports on a regular basis. Generally a strong majority of citizens in the European Union cite the improvement of health as being the principal benefit of sport (78%). It shows the good level of education in the field of positive influence of sport and movement activities as a benefit to one's physical and mental health and for remaining active life. Other reasons for sport practicing are the development of physical performance (46%), relaxation (43%), having fun (39%) and fact of being with friends (31%). Supports rates for other propositions are considerably weaker.

In adult Czech Republic population is prevailing overweight and obesity. Near 52% of adult Czech population have BMI over normal value. From it is 35% overweight and 17% is in the category obesity. Difference from last researches (6 years) is plus 3% more with overweight. To this great population overweight contribute more often men and older people. In the adult population is near 60% men with overweight, but only 46% of women. Among adults in age 18 – 44 years is with normal body weight 67%, but over 45 years it is only 30%.

In general the time devoted by population to physical activity has been shortened. Czech population daily walks about 1 hour and 30 minutes in slower speed, 1 hour and 5 minutes devotes house works and about 41 minutes to exercise or movement. Comparison with former researches show decrease mainly in walking (2 hours 30 minutes less per week), in more challenging movement activities (loss from 4 on 3 hours per week) – recommended quantity is minimally 3 hours 30 minutes per week; this fulfill only one third of Czech adult population. Comparison with former researches respondents devote to the most watched activities significantly less quantity of time; with the exception of sleeping and TV watching. People with overweight spend significantly more period of time with watching TV and with housework, but significantly less time is devoted to sport and movement activities, occupation, school and self study.

Objectives

In this contribution we want to show on Czech adult population its´ somatic parameters changes in accordance with age and determination of these parameters by some selected socio-cultural characteristics.

Methods

In this article are presented results of testing 569 Czech adult people (273 males - M and 296 females - F) older than 18 years. In this contribution there are discussed results in 5 somatic parameters: body height (BH), body weight (BW), BMI, fat tissue percentage (%FAT) and waist hips rate (WHR), which were measured by machine Inbody 720. We were working with fundamental statistical data, like means (x), median, minimum and maximum, standard deviation (s) of the whole group and separately of men (M1 - M6) and women (F1 – F6) and also according to age.

Date about Czech adult population we learned by questionnaire. There were 19 various questions. In this contribution we watch and discuss influence of the whole group answers on questions about life status (single - married – divorced – widowed - registered partnership) and education level (none education - fundamental - trainee - GCE exam - university) on somatic parameters.

RESULTS AND DISCUSSION

1. Level of somatic parameters of present Czech adult population

Tab. 1 Fundamental statistical data

Groups	n	BH [cm]		BW [kg]		BMI [1]		%Fat [%]		WHR [1]	
		x	s	x	s	x	s	x	s	x	s
M1: 18-28	111	180.7	6.7	79.0	10.7	24.1	3.0	13.7	5.9	0.87	0.04
M2: 28,1-38	65	179.0	8.1	82.3	13.7	25.6	3.9	18.9	7.0	0.89	0.04
M3: 38,1-48	43	179.2	7.0	86.8	11.9	26.9	2.6	21.0	6.0	0.90	0.03
M4: 48,1-58	20	176.1	6.4	81.5	11.4	26.2	3.0	21.4	5.2	0.91	0.04
M5: 58,1-68	19	173.1	5.0	84.2	15.4	28.0	4.5	24.3	8.8	0.92	0.05
M6: > 68,1	15	171.4	7.0	83.0	11.3	28.2	3.5	28.9	5.0	0.92	0.04
M1 – M6	273	178.8	6.7	81.9	14.3	26.5	4.7	18.3	6.3	0.89	0.04
F1: 18-28	86	169.2	7.1	64.1	10.2	22.3	3.1	25.3	6.3	0.84	0.04
F2: 28,1-38	67	167.8	6.9	67.3	12.8	23.8	4.0	26.5	7.4	0.85	0.05
F3: 38,1-48	36	166.9	5.6	67.3	9.8	24.1	2.9	28.7	5.7	0.87	003
F4: 48,1-58	23	164.2	6.0	67.6	12.3	24.9	3.9	30.6	6.6	0.88	0.06
F5: 58,1-68	54	161.1	7.0	70.0	12.4	26.9	4.3	34.2	7.8	0.90	0.05
F6: > 68,1	30	159.6	6.6	69.1	11.2	27.1	4.1	35.9	7.5	0.90	0.05
F1 – F6	296	172.1	6.5	74.1	11.4	25.0	3.7	30.2	6.9	0.88	0.05

Body height shows us the tendency of slowing down the secular trends that were watched in Czechoslovakia from 50-

ies to 90-ies, when youths accelerated each 20 years for 2 – 5 cm and after it started to be reduced. It is shown both in groups of men and women, when the youngest groups do not differ very much, while those older have continuously smaller values of body height. The other parameters (BW, BMI, %Fat and WHR) show us together with BH the body composition and distribution of fat tissue and also muscles mass. From this point we can value Czech adult population rather in negative way. At men only M1 group reach normal values in BMI; in %Fat and in WHR only M1 a M2 can be considered like normal, all the others male groups overweight or over recommended values. In BMI parameter women are slightly better. Like overweight can be evaluated only groups F5 a F6. But in parameters %Fat and WHR reach similar values like male groups. It seems that especially older groups of men and women, too, reach from the point of the view of somatic parameters negative values; the older they are the more negative values they have.

2. Determination of somatic parameters by socio-cultural characteristics

Tab. 2 Arithmetical means of watched parameters after question about life status (single - married –divorced – widowed - registered partnership)

life status	n	BH	BW	BMI	%Fat	WHR
single	245	175,5	73,1	23,6	19,0	0,86
married	239	170,5	76,8	26,3	27,0	0,89
divorced	59	168,5	70,2	24,6	27,3	0,87
widowed	26	162,4	69,5	26,2	31,4	0,89
reg. partner.	0					

Distribution resulting from question about life status shows that the majority of adult Czech population has not any partner. Parameter body height shows that the tallest are those single, married and divorced are slightly smaller and smallest are those widowed. Though we do not watch age, we think that in this group the youngest are singles and the oldest are widowed. From this view also BH in this distribution according „life status“ is respecting secular trends of Czech population (fig. 1). Other 4 parameters again confirm negative trends in population. Married have the greatest BW, this also influence overweight BMI; near the same level possess in BMI the widowed, though they have slightly smaller BW, but also they are rather smaller. Parameter %Fat shows that only level in group of singles can be accepted. Other three groups have pretty high values; indirectly it also confirms that the older adults are the more negative this parameter is (fig. 2). Parameter WHR has also negative trends, because of smaller BH in groups of married, divorced and mainly in widowed.

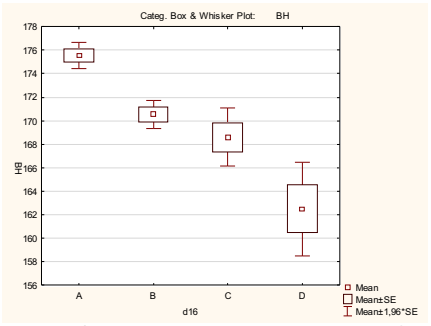


Fig. 1 Body height according life status(single-A, married-B, divorced-C, widowed-D)

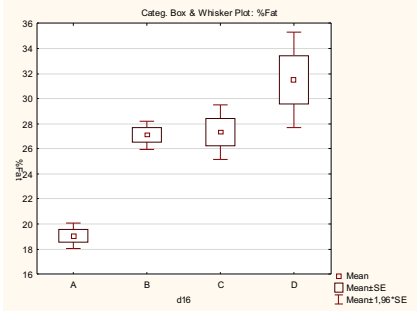


Fig. 2 % Fat according life status (single-A, married-B, divorced-C, widowed-D)

Tab. 3 Means of watched parameters after question about education level (none education - Fundamentals – trainee - GCE exam - university)

education	n	BH	BW	BMI	%Fat	WHR
fundamental	23	169,0	68,7	23,9	23,9	0,86
trainee	85	170,8	80,1	27,3	27,3	0,91
GCE exam	264	171,3	72,8	24,7	23,5	0,87
university	197	174,1	74,3	24,4	22,7	0,87
none education	0					

The level of reached education shows that majority of population (near 60%) possess either GCE or trainee level.

Pretty large group have university education (near 35%), while without education is nobody and fundamental education possess only 4%. This shows good education level in the Czech society. Parameter BH shows that university students are only slightly taller from other groups that do not differ mutually very much. Other 4 parameters indicate that group of trainees possess the worst status. This group has clear the greatest values in all parameters. BMI, %Fat and also WHR are beyond recommended values. It is probable that this group of respondents would have the greatest problem with regular sport practicing.

CONCLUSIONS

1.There is also in this research confirmed the slow down of secular trends in somatic characteristics mainly in parameter body height.

2.Mainly older groups of both sexes have negative values of watched somatic parameters (body weight, BMI, fat tissue percentage and waist hips rate).

3.Life status and level of reached education also influence somatic parameters. Better parameters possess singles, married and divorces are slightly worse, while widowed and with lower level of education are clear the worst.

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RELATIONSHIP BETWEEN SELECTED SOMATIC PARAMETERS AND SOCIO-CULTURAL CHARACTERISTICS OF CZECH ADULT POPULATION

ABSTRACT

In this article are presented results of testing 569 Czech adult people (273 males and 296 females) older than 18 years. In this contribution there are discussed results in 5 physical development parameters: body height, body weight, BMI, fat tissue percentage and waist hips rate, which were measured by machine Inbody 720. By questionnaire were learned parameters of life status and education. Presented results show rather negative trends. Parameters of body weight, BMI, fat tissue percentage and waist hips rate seem to be mutually connected. Body weight increases according higher age in all watched periods, both in groups of males and of females, too, though the body height decreases. This influences also BMI, when most of male groups and two oldest female groups are of overweight. Similarly results can be seen in parameters of fat tissue percentage and waist hips rate. Those who are single or possess good education level have better results in these watched parameters.

KEY WORDS: somatic parameters, Czech adult population, socio-cultural characteristics

RELATION ENTRE LES PARAMÈTRES SÉLECTIONNÉS SOMATIQUES ET CARACTÉRISTIQUES SOCIO-CULTURELLES DE LA POPULATION ADULTE TCHÈQUE

RÉSUMÉ

Dans cet article sont présentés les résultats du test de 569 personnes adultes tchèques (273 hommes et 296 femmes) âgés de plus de 18 ans. Dans cette contribution, il sont discutés des résultats en 5 paramètres physiques de développement: la hauteur du corps, le poids corporel, l'IMC, le pourcentage de tissus adipeux et de la taille des hanches taux, qui ont été mesurés par la machine Inbody 720. Par questionnaire ont été tirées les paramètres de l'état de la vie et de l'éducation. Les résultats présentés montrent des tendances assez négatives. Paramètres de poids corporel, l'IMC, le pourcentage de tissus adipeux et de la taille des hanches taux semblent être reliées entre elles. Le poids corporel augmente avec l'âge selon dans toutes les périodes regardés, à la fois dans les groupes d´hommes et de femmes, aussi bien que la hauteur du corps diminue. Cela influence également l'IMC, quand la plupart des groupes d'hommes et de femmes des deux groupes les plus anciennes sont de poids excessif. De la même manière les résultats peuvent être vus dans les paramètres de pourcentage de tissu adipeux et de taille des hanches taux. Ceux qui sont célibataires ou possédeent le niveau d'éducation ont de meilleurs résultats à ces paramètres surveillés.

MOTS CLÉS: paramètres somatiques, la population adulte tchèque, caractéristiques socio-culturelles

LA RELACIÓN ENTRE LOS PARÁMETROS SOMÁTICOS SELECCIONADOS Y LAS CARACTERÍSTICAS SOCIOCULTURALES DE LA POBLACIÓN ADULTA CHECA

RESUMEN

En este artículo se presentan los resultados de las pruebas realizadas a 569 checos mayores de 18 años (273 hombres y 296 mujeres) En esta contribución se discuten los resultados teniendo en cuanta 5 parámetros de desarrollo físico: la altura corporal, el peso corporal, el índice de masa corporal(BMI),el porcentaje de grasa y tejido y el índice cintura/cadera los cuales fueron medidos con la máquina Inbody 720. Con el cuestionario se conocieron parámetros del nivel de vida y educación. Los resultados presentados muestran tendencias muy negativas. Los parámetros de peso corporal, el índice de masa corporal, el porcentaje de grasa y tejido y el índice cintura/cadera parecen estar conectados entre sí. El peso corporal aumenta con la edad en todos los períodos observados, tanto en grupos de hombres como mujeres, aunque la altura del cuerpo disminuye. Esto influye también en el índice de masa corporal, cuando la mayoría de los grupos de hombres y dos grupos de mujeres mayores tienen sobrepeso. Asimismo los resultados se pueden ver en los parámetros de porcentaje de grasa y tejido y en el índice cintura/cadera. Aquellos que están solteros o tienen un buen nivel de educación tienen mejores resultados en estos parámetros observados.

PALABRAS CLAVE: parámetros somáticos , población adulta Checa, características socioculturales

RELAÇÃO ENTRE OS PARÂMETROS SOMÁTICOS SELECIONADOS E CARACTERÍSTICAS SOCIOCULTURAIS DA POPULAÇÃO ADULTA DA REPÚBLICA CHECA

RESUMO

No artigo a seguir são presentados os resultados do teste de 569 pessoas adultas da República Checa (273 homens e 296 mulheres) na idade acima de 18 anos. Nesta colaboração são discutidos os resultados em 5 parâmetros físicos de desenvolvimento: altura do corpo, peso do corpo, IMC, porcentagem do tecido adiposo e tamanho dos quadris que foram medidos na máquina Inbody 720. Através do questionário foram obtidos os parâmetros do estado da vida e educação. Os resultados apresentados mostram as tendências bastante negativas. Parece que os parâmetros do peso do corpo, IMC, porcentagem do tecido adiposo e tamanho dos quadris são interrrelacionados. O peso do corpo aumenta com a idade, mais nos grupos dos homens que das mulheres, mas pelo contrário, com a idade mais alta, a altura do corpo diminui. Isto tem também uma influência para IMC, quando a maioria dos dois grupos mais velhos tem um excesso do peso. Da mesma maneira, os resultados podem ser observados nos parâmetros de porcentagem do tecido adiposo e tamanho dos quadris. As pessoas solteiras ou com um certo nível de educação têm resultados melhores no que toca estes parâmetros monitorados.

PALAVRAS-CHAVE: parâmetros somáticos, população adulta na República Checa, características socioculturais