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Otłuszczenie u dzieci i młodzieży z dysfunkcjami narządu słuchu z terenu wschodniej Polski

The body fat in children and young people with hearing dysfunctions from eastern Poland

Streszczenie

Wstęp. W przeglądzie literatury badawczej nauk o kulturze fizycznej, dotyczącej szeroko rozumianego rozwoju fizycznego osób niepełnosprawnych, spotykamy najczęściej opracowania poświęcone rozwojowi osób z upośledzeniem umysłowym ze szczególnym uwzględnieniem lekkiego i umiarkowanego stopnia niepełnosprawności. Słuszne, zatem wydało się przeprowadzenie badań w obszarze niepełnosprawności związanej z dysfunkcją narządu słuchu, której poświęcono nieliczne jak dotąd opracowania badawcze. Analizując problematykę osób z dysfunkcją narządu słuchu, stwierdza się, iż niepełnosprawność ta nie jest widoczna w pierwszym momencie, gdyż osoba taka nie odróżnia się od innych. Powstaje zatem pytanie, czy osoby te różnią się w zakresie podstawowych pomiarów rozwoju biologicznego.

Cel. Celem badań jest ocena poziomu otłuszczenia u osób z dysfunkcjami narządu słuchu z terenu wschodniej Polski. Poszukując różnic w otłuszczeniu, wyniki badań odniesiono do norm rozwojowych osób pełnosprawnych zamieszkujących tereny wschodniej Polski.

Materiał i metody. Publikacja stanowi wycinek badań prowadzonych w latach 2004 - 2006 dotyczących oceny rozwoju fizycznego i zdolności motorycznych. Badaniami objęto 339 osób w wieku 8-18 lat zamieszkałych na terenach wschodniej Polski. Z uwagi na obszerny problem badawczy dotyczący rozwoju fizycznego, zwrócono uwagę na jeden parametr jakim jest otłuszczenie, pomijając tym samym pozostałe parametry rozwoju osobniczego. Badania miały charakter diagnostyczny, a metodą badawczą był sondaż diagnostyczny, w którym zastosowano technikę obserwacji, zaś diagnozę rozwoju fizycznego dokonano na podstawie pomiarów antropometrycznych.

Wyniki. Z analizy wynika, iż dziewczęta z dysfunkcją narządu słuchu w porównaniu do rówieśniczek pełnosprawnych charakteryzowały się mniejszym otłuszczeniem ciała, u chłopców stwierdzono podobną zależność jedynie w młodszym okresie życia, później wykazywali oni przeciwne (wyższe) wyniki otłuszczenia.

Słowa kluczowe: dzieci, młodzież, niepełnosprawność, rozwój fizyczny, otłuszczenie

Abstract

Introduction. Reviewing the research literature in the sciences of physical culture on the broadly understood development of people with physical disabilities, we usually find studies on the development of people with mental handicap with particular emphasis on light and moderate degree of disability. It therefore seemed justified to carry out research in the field of disability associated with impaired hearing, on which few research papers have been focused so far. When examining the issues of people with impaired hearing, it appears that disability is not visible for the first time since a disabled person is not different from others. The question then arises whether these persons differ in the baseline measurements of biological development.

Aim. The aim of the research is to estimate the body fat distribution in people with hearing dysfunctions in eastern Poland. While looking for differences in body fat, the analysis results concerned the standards of healthy people living in eastern Poland.

Material and methods. The paper presents only a part of an analysis that was carried out in 2004-2006 and it was related to the estimation of physical development and motor abilities. The study concerned 339 people aged 8-18 living in eastern Poland. Because of the extensive research on the problem of physical development attention was drawn only to the level of adipose tissue thereby ignoring other physical parameters of individual development. The study was of diagnostic character, and the research method was a survey in which the observation technique was used whereas the physical development diagnosis was done on the basis of anthropometric measurements.

Results. The research shows that girls with hearing dysfunction are characterized by a lower level of fatness in comparison to healthy peers. In the case of boys, a similar relationship can be noticed but only in the early stage of life, later on the results were opposite – the body fat was higher.

Key words: children, youth, disability, physical development, body fat.

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INTRODUCTION

Physical development is a general change in life from a cellular structure of the human body to the formation of a human being. The changes that take place during the years of childhood, adolescence and youth, lead to achieving independence and the possibility of extending the species by giving birth to children. These changes mean growing up, differentiation and maturation [1]. The concept of physical development is often replaced with the terms: somatic, biological, or morphological development. The evaluation of physical development is often the primary measurement of the health status of people at the age of development. Children of parents with higher education showed accelerated biological development when compared with children of less educated parents and with lower-income [2].

Numerous studies conducted both in Poland [3, 4] and abroad [5-7] found a relationship between the social variables and fatness of children and adults. Nevertheless, these results are not as obvious as in the case of assessing height.

It was also found that obesity in adults increases when their education changes [8]. As the literature proves, fatness and height are the two biological features that are socially diversified even at the later stages in life. Authors of other publications have shown that fatness increases together with an increasing level of education in both sexes [9]. The study on fatness carried out by Charzewski [10] showed that in the examined group it increases with an increase in the level of education, but only in the case of boys. Similar trends among boys were indicated by Orlicz [11] who showed a low frequency of obesity in the case of boys from families of the lowest social status; a high percentage of obese and overweight boys was noted in the case of those whose parents have at least secondary education.

The literature also draws attention to a great significance of physical activity in obesity prophylaxis [12-15].

A number of researchers [16-18] worked on the influence of external modifiers on the level of physical characteristics in the development of children and young people. The authors also mentioned a strong impact of family economic conditions. As Kaczmarek [19] points out, the socio-economic status of the family, determined on the basis of the level of parents' education, job, financial opportunities, the number of children and living conditions, significantly affects the physical development of children.

Social and welfare differentiation of a society leads to consequences in physical development of young people. The widely known ones include: a lower average level of development of children and young people from rural areas when compared with their peers in cities; lower average somatic growth rates in families with many children in comparison to those raised in families with few children; differences in physical development of children and young people from different social background [20].

The research concerning physical development of disabled people was started in Poland by Dziedzic [21] and carried further all over the country by Maszczak [22]. Recently, also the works by Zwierzchowska and Gawlik [23], Bergier and Dąbrowski [24] concerned the physical development of disabled people in relation to the sense of hearing. The authors from other countries who analyze the process of physical development of teenagers with hearing dysfunction are: Berg [25], Hattin et al [26], Shephard [27], Zody and Gorman [28]. The research results of all these authors indicate worse physical development of the disabled.

AIM

The aim of the presented study is to assess the level of fatness in children and adolescents with hearing dysfunctions from eastern Poland. While looking for differences in fatness, the research results were compared with normal results for people living in eastern Poland [29]. The next step was to analyze the degree of fatness taking into account internal conditions related with the level of hearing dysfunction and its etiology, as well as environmental factors such as parents' education and socio-living conditions of families.

The studies were diagnostic and the testing method was a diagnostic survey, a technique that uses a direct participant observation in the form of a questionnaire survey and an interview questionnaire, whereas the diagnosis of the physical measurements was based on anthropometrics. The tests were carried out in accordance with the recommendations of the International Biological Program, on the basis of the thickness of skin-fatty folds measured by Harpenden foldmeter, respondents indicated the level of fatness on the basis of the percentage distribution.

The material was analyzed statistically in accordance with the applicable rules, using the STATISTICA package. Statistical analysis included the arithmetic mean ($\bar{x}$), standard deviation (s), standard errors arithmetic averages (Ex), limit of the measured characteristics, the annual increase in the characteristics (d) and the coefficient variation (V). The importance of the differences between the average characteristics of the physical terms of the comparative studies results were evaluated with Student t-test, assuming the level of significance $p = 0.05$ and $p = 0.01$.

The characteristics of the examined people are presented in the percentage distribution of abundance, while the correlation between the variables was studied with a Chi-square independence test, as well as on the basis of correspondence. The force of relationship between the variables was defined by C Pearson contingency coefficient.

The paper presents only a part of the research carried out from April 2004 to June 2006 for the evaluation of the physical and motor ability and activity in leisure time. The study covered 339 students, including 185 boys (54.6%) and 154 girls (45.4%) aged 8-18 years, with partially or totally reduced hearing ability. During the research, the respondents attended school-educational centers in Lublin, Przemyśl, Olecko accepting pupils from primary schools, lower secondary schools and secondary schools. The centers took care of children and young people from the provinces: Podkarpacie, Lublin, Podlasie, and Warmia-Masuria. The boys and girls were brought up in a village or in a city, the proportion for the respondents from the country was 59.6% and from the city 40.4%. The respondents were mostly people with little hearing ability (51.9%) and deaf (48.1%). As the analysis shows, the majority of them (61.9%) were deaf from birth (called congenital deafness), among the rest of them (38.1%), the hearing loss occurred after a period of fetal life. The problem of the hearing ability damage

among the family members was declared by 37.2% of the respondents, whereas 62.8% did not declare this fact.

The structure of the surveyed boys and girls was as follows: 79.0% had a complete family, 11.8% indicated an incomplete family, 4.7% lived in broken families, 2.4% in foster families and 2.1% in reconstructed families. No statistically significant relationship was detected between the home and family structure (p=0.51). Education of parents provide as follows: 20.6% of mothers and fathers had primary education - 22.1%, 50.4% of mothers and fathers had technical education - 57.8%, 24.8% of mothers and fathers had secondary school education - 15.6%. The least numerous were the parents with higher education: 4.2% of mothers and 4.5% of fathers. There was also a statistically significant relationship between home and education of both parents (p=0.43 and p =0.06).

The study estimates that the conditions in which the respondents were brought up were mostly good (43.1%) and average (34.2%). Very poor living conditions were declared by 13.0% of the respondents, while very good only by 9.7%. A statistically significant relationship between the place of living and family living conditions (p=0.46) was not detected. On the basis of calculations it was found that there is a statistically significant relationship between the education of parents and the living conditions of families (p<0.01). This relationship obtains at the level of contingency 0.41 for mothers and 0.34 for fathers. Correspondence analysis showed that the respondents whose parents have higher and secondary education, described family living conditions as very good and excellent, and parents with primary education and technical education described conditions as insufficient, and average.

ANALYSIS OF TEST RESULTS

The average results of the percentage of fatness (F%) in boys and girls with hearing dysfunctions at the school age are presented in Table 1. The content of fatness in boys ranged from 14.04% in 8-year-olds to 18.77% in 13-year-olds. The greatest increase in fatness was observed in the case of 11-year-old boys (2.01). The average value of fatness (F%) in girls ranged from 19.87% at the age of 9 to 26.26 at the age of 17. The greatest difference in the percentage of fatness between the compartments was observed in girls aged 9 (3.24).

The analysis of the percentage of body fatness in boys and girls with hearing dysfunctions and the comparative studies (Table 2) showed lower levels of fatness in boys aged 8-12 and 16, and in the remaining age groups boys ranked lower than their peers. Differences were statistically significant only for 18-year-old boys, while the greatest difference among the examined people occurred in the case of 12-year-olds (2.68%). The percentage of body fatness in girls showed a lower level for 9-18 years old. Only the girls aged 8 had a higher percentage of fatness when compared with their peers without disabilities. The differences were statistically significant at the age of 8 and 16-18, and the difference was the greatest in the case of 18-year-olds (8.82%).

Body fatness in boys and girls with hearing dysfunctions, depending on the level of hearing ability, on the basis of standardized characteristics, is shown in Figure 1.

The level of hearing ability was accepted according to the classification that distinguishes two kinds of hearing damage, dividing people into two groups: the deaf and those with hearing disabilities [30]. In comparison to their peers, deaf boys had greater fatness determined on the basis of the percentage of body fatness. The analysis of physical development on the basis of deaf girls' fatness when compared with their poorly hearing peers, showed a lower percentage of body fatness.

On the basis of an additional analysis of variances, one can draw the conclusion that the level of hearing ability of the surveyed people does not have any statistically significant impact on the level of physical characteristics (p>0.05).

Analyzing the level of fatness (Figure 2) on the basis of characteristics standardized according to the etiology of hearing dysfunctions [31] which points to the emergence of auditory dysfunctions (congenital or acquired), a lower percentage of fatness was observed in children with congenital hearing dysfunction. The girls with congenital hearing dysfunction had a higher percentage of fatness as compared with those with acquired dysfunctions. The analysis of the level of fatness on the basis of the etiology of hearing dysfunction has not indicated any statistically significant interaction (p>0.05).

The level of body fatness in the surveyed people analyzed on the basis of their mother's education is presented in Figure 3. The examined boys with hearing dysfunctions whose mothers had primary education had the lowest level of fatness. The boys whose mothers had higher education can be characterized by the highest percentage of fatness. The girls whose mothers had primary or higher education are characterized by the highest percentage of fatness, while the young girls whose mothers have secondary education or training, showed the lowest percentage of fatness. The analysis of variances leads to the conclusion that mother's education does not significantly affect physical characteristics of the respondents (p>0.05).

The analysis of the examined people on the basis of their father's education is presented in Figure 4. It proves that the boys whose fathers had higher or secondary education have the highest percentage of body fatness. The boys whose fathers had basic or technical education are characterized by the lowest percentage of body fatness.

The girls whose fathers had primary or higher education are characterized by the highest parameters of body fatness, whereas those whose fathers declared technical or secondary school education showed the lowest percentage of fatness. The analysis showed no statistically significant impact of father's education on the level of body fatness in surveyed boys and girls (p>0.05) .

Standardized physical characteristics of the respondents on the basis of the socio-living conditions of the family are presented in Figure 5. It shows that the boys from families with very good living conditions had the greatest fatness, while the boys from families with insufficient living conditions had the smallest body fatness. A similar situation was observed among the girls whose families had very good socio-living conditions: they are characterized by the highest parameters of fatness in relation to the girls from families with an average and poor living conditions. Basing on the analysis of variances, one can draw a conclusion that living conditions of the surveyed people did not significantly affect the level of body fat distribution (p>0.05).

TABLE 1. The percentage of fatness in boys and girls with hearing dysfunctions.

Age	$\bar{x}$	E_x	s	V	The variation limits	d
Boys						
8	14.04	0.69	2.17	15.45	11.56-17.52	-
9	15.97	1.26	3.98	24.92	11.37-21.57	1.93
10	15.20	0.67	2.01	13.22	12.45-19.23	-0.77
11	17.21	0.87	3.36	19.52	13.03-23.03	2.01
12	16.99	0.67	2.41	14.18	12.51-21.51	-0.22
13	18.77	0.50	2.37	12.63	14.44-24.03	1.78
14	17.68	0.49	2.23	12.61	14.45-22.62	-1.09
15	17.14	0.69	3.23	18.84	12.66-24.55	-0.54
16	15.59	0.75	3.08	19.75	11.37-21.91	-1.55
17	16.48	1.13	3.75	22.75	12.28-23.03	0.89
18	16.41	0.51	2.90	17.67	12.29-22.61	-0.07
Girls						
8	23.11	1.41	4.00	17.31	18.24-30.92	-
9	19.87	1.24	3.51	17.66	15.79-25.19	-3.24
10	18.25	0.55	1.47	8.05	16.52-20.71	-1.62
11	20.57	0.92	3.78	18.38	12.59-28.74	2.32
12	21.39	0.88	3.17	14.82	17.23-27.24	0.82
13	23.33	0.77	2.66	11.40	19.6-28.19	1.94
14	25.51	1.01	3.20	12.54	20.82-30.75	2.18
15	26.16	1.06	3.34	12.77	20.72-30.75	0.65
16	25.82	0.63	2.61	10.11	20.73-30.37	-0.34
17	26.26	0.84	3.86	14.69	19.95-38.55	044
18	24.66	0.96	4.11	16.67	16.52-29.75	-1.60

TABLE 2. The percentage of body fatness in boys and girls with hearing organ dysfunctions in comparison with a population of people without disabilities.

Age	Own Research	Research nationwide	Difference	t-Student	p
Boys					
8	14.04	15.73	-1.69	1.229011	0.222103
9	15.97	17.18	-1.21	0.628109	0.531541
10	15.20	17.72	-2.52	1.099344	0.273996
11	17.21	18.93	-1.72	0.796919	0.427022
12	16.99	19.67	-2.68	1.008955	0.314885
13	18.77	18.07	0.70	0.462621	0.644320
14	17.68	15.88	1.80	1.411218	0.160551
15	17.14	16.31	0.83	0.749315	0.455538
16	15.59	16.82	-1.23	0.845021	0.399795
17	16.48	16.20	0.28	0.221760	0.824897
18	16.41	14.35	2.06	3.415209**	0.000839
Girls					
8	23.11	19.15	3.96	2.421919*	0.017222
9	19.87	20.90	-1.03	0.447436	0.655623
10	18.25	22.06	-3.81	1.630273	0.106159
11	20.57	22.64	-2.07	1.365104	0.174692
12	21.39	23.12	-1.73	0.927590	0.355467
13	23.33	26.30	-2.97	1.334047	0.184673
14	25.51	26.46	-0.95	0.417858	0.676774
15	26.16	29.91	-3.75	1.477262	0.142780
16	25.82	29.52	-3.70	2.269827*	0.024791
17	26.26	30.93	-4.67	2.678632**	0.008271
18	24.66	33.48	-8.82	4.534812**	0.000013

* Difference statistically significant at the level $p < 0.05$
** Difference statistically significant at the level $p < 0.01$

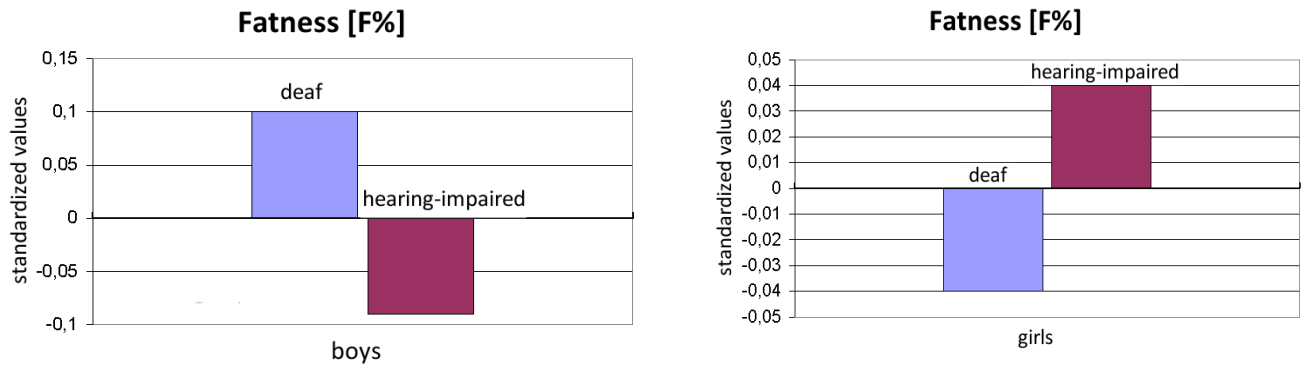

FIGURE 1. Standardized values of the percentage of fatness in boys and girls, depending on the level of hearing.

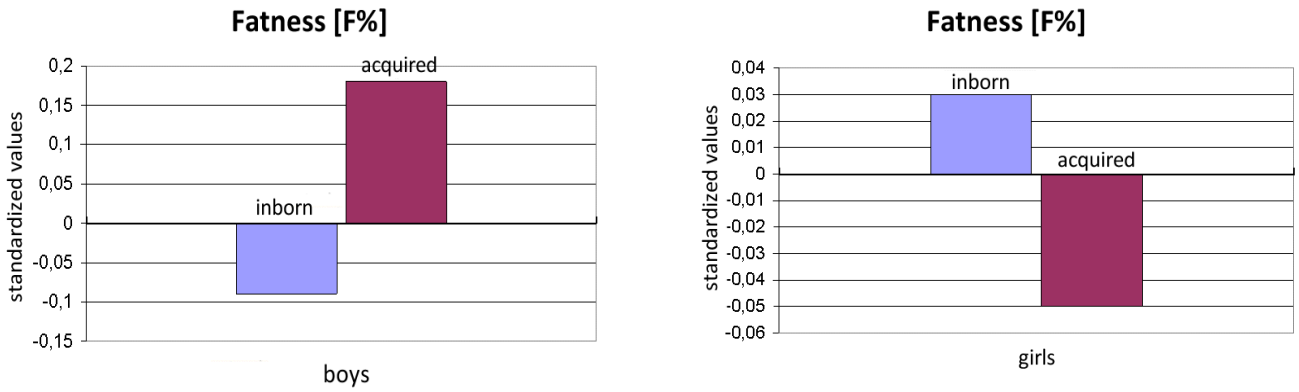

FIGURE 2. Standardized values of the percentage of fatness in boys and girls, depending on the etiology of hearing dysfunction.

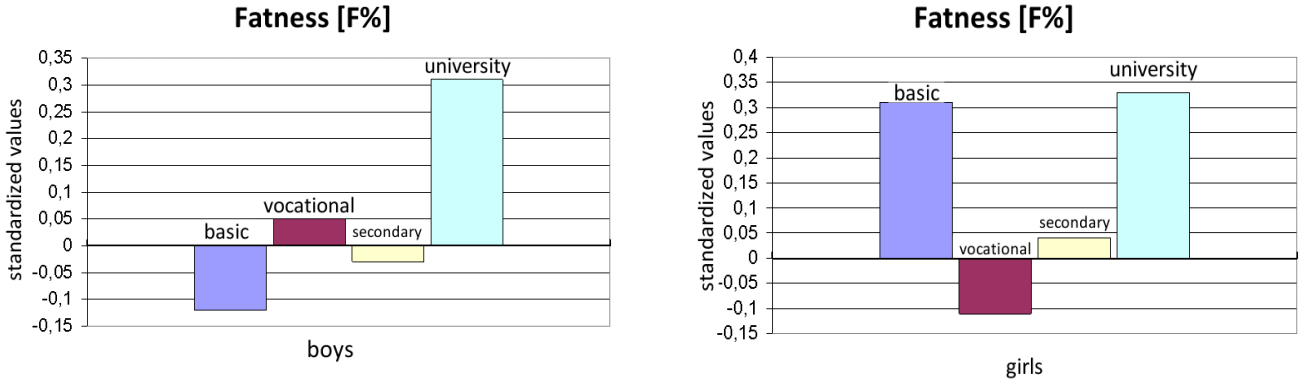

FIGURE 3. Standardized values of the percentage of fatness in boys and girls, depending on mother's education.

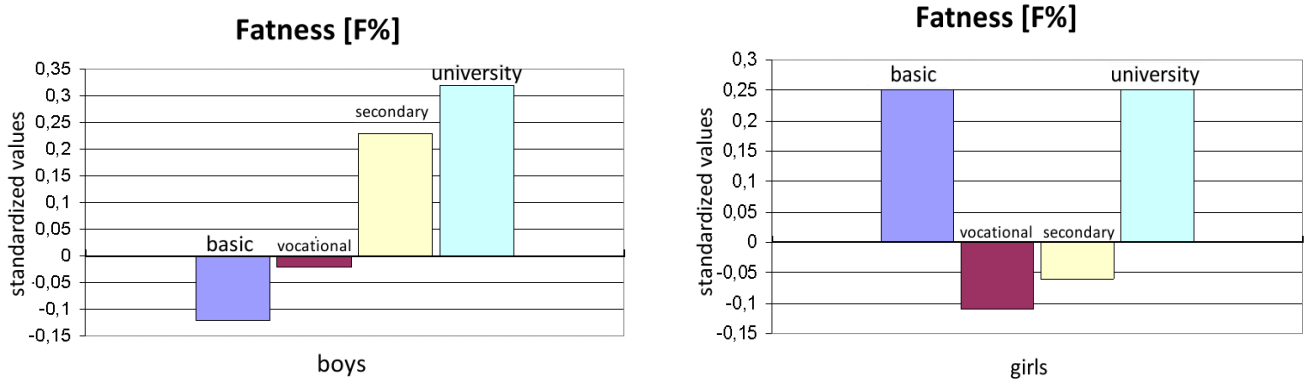

FIGURE 4. Standardized values of the percentage of fatness in boys and girls depending on father's education.

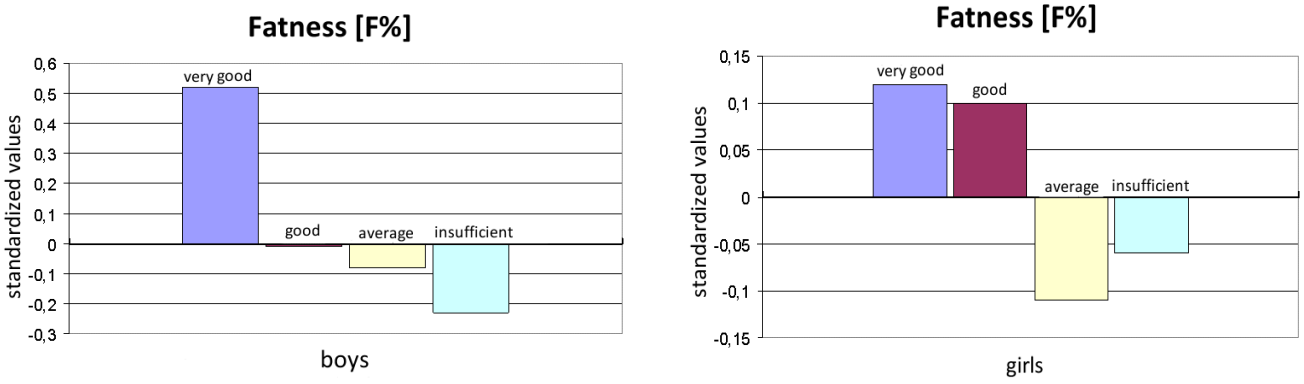

FIGURE 5. Standardized values of the percentage of fatness in boys and girls depending on family's socio-living conditions.

CONCLUSIONS

Basing on the analysis, the following conclusions can be drawn:

1. The girls with reduced hearing, compared to their peers without disabilities, had lower body fatness; there was a similar relation in the case of boys, but in an earlier period of their life, later they showed opposite (higher) results concerning fatness.
2. The distribution of body fatness did not significantly mark out the children and teenagers according to their the level of hearing. However, greater fatness was observed in the deaf boys, and the girls with hearing dysfunctions showed greater fatness.
3. Body fatness, analyzed according to the etiology of hearing dysfunction, did not show statistically significant differentiation. There has been a lower level of fatness in the boys with a congenital hearing dysfunction, and in the girls with an acquired one.
4. There was no statistically significant impact of the level of parental education on fatness in the children and adolescents with hearing dysfunctions. The tests confirmed more fatness in people whose parents have higher education.
5. The study also showed no significant influence of socio-living conditions on the level of fatness, however, there is a clear trend showing an increase in body fatness along with an increased level of affluence of families.

REFERENCES

1. Wolański N. Rozwój biologiczny człowieka. PWN, Warszawa. 1986; Wydanie VI.
2. Malinowski A. Norma biologiczna a rozwój somatyczny człowieka. Warszawa: IWZZ; 1987.
3. Charzewska J. Społeczne uwarunkowania nadwagi i otyłości u mężczyzn zawodowo czynnych z Warszawy. Warszawa: Prace Instytutu Żywności i Żywienia; 1985. p.36.
4. Popławska H. Rozwój biologiczny dziewcząt i chłopców ze środowiska wiejskiego z terenów Południowego Podlasia. W świetle wskaźników otłuszczenia. Studia i Monografie. Warszawa: AWF: 2006. p.107.
5. De Spiegelaere M, Dramaix M, Hennart P. The influence of socioeconomic status on the incidence and evoluationof obesity during early addescence. Int J Obes Relat Metab Disord. 1998;22(3):268-74.
6. Duran-Tauleria E, Rona RJ, Chinn S. Factors associated with weight for height and skinfold thickness in British children. J Epidemiol Comm Health. 1995;49(5):466-73.
7. Gortmaker SL, Must A, Perrin JM, Sobol AM, Dietz WH. Social and economic consequences of overweight in adolescence and young adulthood. New Eng J Med. 1993;329:1008-12.
8. Rogucka E, Bielicki T. Social class contrast in the obesity among adult large-city dwellers in Poland in 1986 and 1996. J Biosoc Sci. 1999;31: 419-23.
9. Saczuk J, Tarasiuk D. Wpływ wielkości rodziny na rozwój fizyczny dzieci i młodzieży w wieku 3-19 lat we wschodnich województwach Polski. Instytut Wychowania Fizycznego i Sportu, Biała Podlaska. Rocznik Naukowy. 1996; t.2.
10. Charzewski J. Aktywność fizyczna dzieci z dwóch skrajnych warstw społecznych. Wychowanie Fizyczne i Sport. 2003;47.
11. Orlicz B. Społeczne uwarunkowania otyłości i nadwagi dzieci warszawskich. Wychowanie Fizyczne i Sport. 1994;1.
12. Curioni CC, Lourenco PM, Long-term weight loss after diet and exercise: a systematic review. Int J Obes (Lond). 2005;29(10):1168-74.
13. Kay SJ, Fiatarone Singh MA, The influence of physical activity on abdominal fat: a systematic review of the literature. Obes Rev. 2006; 7(2):183-200.
14. Lakka TA, Bouchard C. Physical activity, obesity and cardiovascular diseases. Handb Exp Pharmacol. 2005;(170):137-63.
15. Saris WHM, Blair SN, van Baak MA, Eaton SB, Davies PSW, Di Pietro L, Fogelholm A, Rissanen A, Schoeller D, Swinburn B, Tremblay A, Westerterp KR, Wyatt H. How much physical activity is enough to prevent unhealthy weight gain? Outcome of the IASO 1st Stock Conference and consensus statement. Obes Rev. 2003;4:101-14.
16. Łaska–Mierzejewska T, Łuczak E. Biologiczne mierniki sytuacji społeczno–ekonomicznej ludności wiejskiej w Polsce w latach 1967, 1977, 1987. Wrocław:Monografie Zakładu Antropologii PAN; 1993. p10.
17. Łaska–Mierzejewska T, Olszewska E. Antropologiczna ocena zmian rozwarstwienia społecznego populacji wiejskiej w Polsce w okresie 1967-2001. Badania dziewcząt, Studia i Monografie. Warszawa: AWF; 2003. 95.
18. Radzka C. Społeczne uwarunkowania rozwoju fizycznego, aktywności fizycznej oraz sposobu żywienia uczniów szkół warszawskich w wieku 12.5-15.5 lat. Dysertacja doktorska. Warszawa: AWF;1998.
19. Kaczmarek M. Wpływ warunków życia na wzrastanie i rozwój człowieka. Seria Antropologia. Poznań: UAM; 1995. 20.
20. Nowicki G. Rozwój fizyczny dzieci i młodzieży w rodzinach wiejskich. Bydgoszcz: KRSW; 2004.
21. Dziedzic J. Sprawność fizyczna dzieci głuchych. Kultura Fizyczna. 1967; 8.
22. Maszczak T. Ocena wybranych wskaźników morfologicznych i motorycznych dzieci niesłyszących. Szkoła Specjalna. 1973; 2.
23. Zwierzchowska A., Gawlik K. Wychowanie fizyczne i sport dzieci i młodzieży niesłyszącej i słabosłyszącej. Katowice :AWF; 2005.
24. Bergier J, Dąbrowski D. Evaluation of physical development of children and teenagers from lubelskie voyevodship with hearing damage. Pol J Environ Stud. 2006;15 (6B).
25. Berg FS. Characteristics of the target population. Educational audiology for the hard of hearing child. Grune & Stratton, New York-Boston-London. 1986.
26. Hattin H, Fraser M, Ward GR, Shephard R. Are deaf children unusually fit. A comparison of fitness between deaf and blind children. Adapted Physical Activity Quarterly. 1986;3.
27. Shephard Roy. J. Fitness in special Populations. Champagin. Illinois. 1990.
28. Zody JM, Gorman DR. Factorial study of manipulative testes administered to children with deafness ages eight to fifteen. J Human Mov Stud 1990;2:85-91.
29. Skład M, Popławska H. Dziecko wiejskie bialskopodlaskie. Biała Podlaska: ZWWF;2004.
30. Eckert U. Wybrane zagadnienia z surdopedagogiki. Warszawa: WSPS; 1998.
31. Périer O. Dziecko z uszkodzonym narządem słuchu. Warszawa :WSiP; 1992.

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