Hellenic Journal of Physical Education & Sport Science

FREE FULL TEXT

This is a summary plus of a paper published in Hellenic Journal of Physical Education and Sport Science. You can cite this article as follows:

P. D.Tsimeas, A. Tsiokanos, S. Ikonomidis, P. Ziara (2010) Comparison of Physical Activity in Urban and Rural Greek Children 12 Years Old. *Hellenic J Phys Educ & Sport Sci, 2010,* (30) 2: 191 – 204

Hellenic Journal of Physical Education & Sport Science

.BSMC=;F ;=NCPCNS ;H> B?;FNB

!-+. 0'1-, -$.&71'! * !2'4'27 ', 30 , ," 030 * !&'*"0#, 7# 01 -*"

.;H;ACINCM[1] "N2B;H;GM?;C[4]M 12JMCLC>;H1[1]ME IH1[1]C > CM
.;H;ACIN[2]; 8C;L;

[1] &GRCTVOGPV QH 5RQTVU CPF 'ZGTEKUG 5EKGPEG 6JG)TGGEG
[2] 6GCEJGT QH 2J[UKECN 'FWECVKQP

Ε.Γ.Β.Ε.
1954

<MNL;=N

6JG RWTRQUG QH VJKU UVWF[YCU VQ GZCOKPG RQUUKDNG FKHHGTGPEGU
RJ[UKECN CEVKXKV[NGXGN CPF JGCNVJ TGNCVGF ..
HTGSWGPE[QH RCTVKEKRCVKQP KP URQTVU CPF GZGTEKUG
WTDCP CPF TWTCN CTGCU
CUUGUUGF VJTQWIJ C SWGUVKQPPCKTG
NQY NGXGN QH RJ[UKECN CEVKXKV[9GUVGTP
ICXG JKIJGT HTGSWGPE[QH RJ[UKECN CEVKXKV[
EQORCTGF VQ VJQUG
6QEQORCTG VJG
V VGUV HQT KPFGRGPFGPV UCORNGU
CPF RJ[UKECN CEVKXKV[
DGVYGGP VJG VYQ ITQWRU
CORNG UK\G
DQ[U CPF IKTNU
UWDLGEVU
KPVGTXGPVKQP KP URGEKHKE RQRWNCVKQPU

)?S QIL>M DKQNQIKECN OCVWTKV[EJKNFTGP RJ[U

Hellenic Journal of Physical Education & Sport Science, 2010, 30 (2): 191-204

Introduction

Keeping and improving public health is a high priority aim of a modern society. In order to achieve this aim many health organizations are planning and promoting intervention programs. The proper planning of these programs demands a clear determination of factors affecting public health. It is well known that health is influenced by physical activity, while the later is influenced by environmental factors. However, there is no consensus on the effect of the place of residence on physical activity. Therefore, the aim of this study was to examine the impact of the place of residence on physical activity in 12-years old schoolchildren.

Methods

The sample consisted of 360 boys (189 urban and 171 rural) aged 12.3±0.42 yrs και 247 girls (125 urban 122 rural) aged 12.3±0.43 yrs. All subjects were recruited from the Greek prefecture of Trikala. The participants were assessed for last year leisure physical activity using a questionnaire (Aaron, et al., 1993), biological maturation and anthropometrical characteristics (Tanner, 1962). To investigate the effect of residence in physical activity the Mann-Whitney U test was used. To compare the biological maturity of children in urban and rural areas χ^2 test was used. To compare the anthropometric characteristics of children in urban and rural areas the t-test for independent samples was applied. To check for the normality of the data we utilized the kolmogorov-smirnov test.

Results

There were no differences between urban and rural children in Vigorous Physical Activity (VPA) and Total Physical Activity (TPA), but Moderate to Vigorous Physical Activity (MVPA) was higher in rural than urban areas among children (Table 1).

Table 1. Differences between urban and rural children in Physical Activity

Intensity of Physical Activity	Sex	Urban			Rural			
		$\overline{X}$	*SD*	Mean Rank	$\overline{X}$	*SD*	Mean Rank	z
MVPA	Boys	0.06	0.10	169.61	0.07	0.09	193.37	-2.29*
(Hours/Day)	Girls	0.11	0.16	103.49	0.19	0.23	136.93	-3.79**
VPA	Boys	2.05	1.42	190.31	1.80	1.28	170.89	-1.77
(Hours/Day)	Girls	0.98	0.73	119.62	0.95	0.66	120.39	-.09
TPA	Boys	2.11	1.45	189.44	1.87	0.74	171.83	-1.60
(Hours/Day)	Girls	1.09	0.74	117.43	1.14	0.75	122.64	-.56

MVPA: Moderate to Vigorous Physical Activity, **VPA**: Vigorous Physical Activity, **TPA**: Total Physical Activity, $^{*}p<.05$, $^{**}p<.001$.

Furthermore, no statistical difference was observed between urban and rural children in biological maturation (Table 2).

Table 2. Distribution of the sample per sex, place of residence and maturation stages

Sex / Place of residence						Total	*p*
Boys (n=360)	Maturation Stages						
	1	**2**	**3**	**4**	**5**		
Urban	8	68	72	38	3	189	.519
Rural	9	60	65	35	2	171	
Girls (n=247)	Maturation Stages						
	1	**2**	**3**	**4**	**5**		
Urban	1	16	66	38	4	125	.943
Rural	2	15	61	41	3	122	

Table 3. Anthropometric characteristics and Skinfold Sum per Place of Residence and Sex

Anthropometric characteristics	Φύλο	Urban		Rural		
		$\overline{X}$	*SD*	*SD*	$\overline{X}$	t
Height	Boys	154.00	7.39	153.20	7.13	1.03
(cm)	Girls	154.61	7.05	154.37	6.25	0.27
Body Mass	Boys	49.96	10.13	46.42	8.51	3.46*
(Kg)	Girls	50.69	10.57	49.70	10.44	0.73
BMI	Boys	21.08	3.43	20.14	3.24	2.64*
(Kg/m^2)	Girls	20.86	3.33	20.49	3.33	0.86
Arm Span	Boys	155.27	8.27	154.37	8.23	1.01
(cm)	Girls	155.12	7.78	153.85	6.41	1.38
Skinfold Sum	Boys	50.11	28.59	43.88	26.75	2.11*
(mm)	Girls	54.38	24.97	54.02	27.20	1.12

*$p<.05$, **$p<.001$.

Discussion

Although the lack of differences between urban and rural children in terms of the VPA and the TPA is in agreement with the results of several studies (Booth, Okely, Chey, Bauman, &

Macaskill, 2002; Tognarelli, et al., 2004), there are a number of studies present different conclusions. More specifically, these studies show differences either for urban (Kristjansdottir & Vilhjalmsson, 2001; Parks, Housemann, & Brownson, 2003), or for non-urban areas (Dollman, Norton, & Tucker, 2002; Ozdirenc, Ozcan, Akin, & Gelecek, 2005). The diversity of the results of these studies, possibly due to different methodological approaches used to examine the assumptions made (Sallis, Prochaska, & Taylor, 2000).

Differences in anthropometric characteristics and the Skinfold Sum of boys are in agreement with the results of some studies (Guillaume, Lapidus, Bjorntorp, & Lambert, 1997; Moreno, et al., 2001)and are in contrast to other results (Cheng, et al., 2003; McMurray, et al., 1999). These differences cannot be attributed to total physical activity and maturation since no relevant differences were found. However, it could be due to other factors not examined in this study, such as eating habits (Mamalakis & Kafatos, 1996).

Conclusion

The above results indicated that there was no clear impact of place of residence on vigorous physical activity as studied herein. However, the above results could be useful to health program planners in order to focus interventions on particular paediatric populations (urban boys).

References*

Aaron, D. J., Kriska, A. M., Dearwater, S. R., Anderson, R. L., Olsen, T. L., Cauley, J. A., et al. (1993). The epidemiology of leisure physical activity in an adolescent population. Medicine and Science in Sports and Exercise, 25(7), 847-853.

Ainsworth, B. E., Haskell, W. L., Whitt, M. C., Irwin, M. L., Swartz, A. M., Strath, S. J., et al. (2000). Compendium of physical activities: an update of activity codes and MET intensities. Medicine 32(9), S498-504.

Anastassea-Vlachou, K., Fryssira-Kanioura, H., Papathanasiou-Klontza, D., Xipolita-Zachariadi, A., & Matsaniotis, N. (1996). The effects of television viewing in Greece, and the role of the paediatrician: a familiar triangle revisited. European Journal of Pediatrics, 155(12), 1057-1060.

Booth, M. L., Okely, A. D., Chey, T., Bauman, A. E., & Macaskill, P. (2002). Epidemiology of physical activity participation among New South Wales school students. Australian and New Zealand Journal of Public Health, 26(4), 371-374.

Brooks-Gunn, J., Warren, M., Rosso, J., & Gargiulo, J. (1987). Validity of self-report measures of girls' pubertal status. Child Development, 58(3), 829-841.

Carroll, D., Hostetter, R., & Eastman, W. (1996). The relationship between high school physical education enrollment and leisure time physical activity. Avante, 2(1), 69 -78.

Cheng, Y. J., Macera, C. A., Addy, C. L., Sy, F. S., Wieland, D., & Blair, S. N. (2003). Effects of physical activity on exercise tests and respiratory function. British Journal of Sports Medicine, 37(6), 521-528.

Corbin, C. B. (1987). Youth fitness, exercise and health: There is much to be done. Research Quarterly for Exercise and Sport, 58(4), 308-314.

Corbin, C. B., & Lindsey, R. (1985). Concepts of physical fitness, with laboratories (5th ed.). Dubuque, Iowa: W.C. Brown.

Corlett, J. T., & Mokgwathi, M. M. (1987). Running performance of Tswana children. Physical Education Review Manchester, 10(2), 110-113.

Dollman, J., Norton, K., & Tucker, G. (2002). Anthropometry, fitness and physical activity of urban and rural south Australian children. Pediatric Exercise Science, 14(3), 297-312.

Duke, P., Litt, I., & Gross, R. (1980). Adolescents' self-assessment of sexual maturation. Pediatrics, 66(6), 918.

Eastman, W., Hostetter, R., & Carroll, D. (1992). The relationship between elective physical education course enrollment and leisure time physical activity: a Newfoundland perspective. CAHPER Journal, 58(3), 17-20.

Guillaume, M., Lapidus, L., Bjorntorp, P., & Lambert, A. (1997). Physical activity, obesity, and cardiovascular risk factors in children. The Belgian Luxembourg Child Study II. Obesity Research, 5(6), 549-556.

Hawes, M. R., & Martin, A. D. (2001). Human body composition. In R. G. Eston & T. Reilly (Eds.), Kinanthropometry and exercise physiology laboratory manual: tests, procedures and data (2 ed., Vol. 1, pp. 7-46). London: Routledge.

Kristjansdottir, G., & Vilhjalmsson, R. (2001). Sociodemographic differences in patterns of sedentary and physically active behavior in older children and adolescents. Acta Paediatrica, 90(4), 429-435.

Loucaides, C. A., Chedzoy, S. M., & Bennett, N. (2004). Differences in physical activity levels between urban and rural school children in Cyprus. Health Education Research, 19(2), 138-147.

Mamalakis, G., & Kafatos, A. (1996). Prevalence of obesity in Greece. International Journal of Obesity and related Metabolic Disorders, 20(5), 488-492.

McMurray, R. G., Harrell, J. S., Bangdiwala, S. I., & Deng, S. (1999). Cardiovascular disease risk factors and obesity of rural and urban elementary school children. Journal of Rural Health, 15(4), 365-374.

Moreno, L. A., Sarria, A., Fleta, J., Rodriguez, G., Gonzalez, J. M., & Bueno, M. (2001). Sociodemographic factors and trends on overweight prevalence in children and adolescents in Aragon (Spain) from 1985 to 1995. Journal of Clinical Epidemiology, 54(9), 921-927.

Morris, N., & Udry, J. (1980). Validation of a self-administered instrument to assess stage of adolescent development. Journal of Youth and Adolescence, 9(3), 271-280.

Norusis, M. J. (2000). SPSS 10.0 guide to data analysis. Upper Saddle River, N.J.: Prentice Hall.

Ozdirenc, M., Ozcan, A., Akin, F., & Gelecek, N. (2005). Physical fitness in rural children compared with urban children in Turkey. Pediatrics International : official journal of the Japan Pediatric Society, 47(1), 26-31.

Parks, S. E., Housemann, R. A., & Brownson, R. C. (2003). Differential correlates of physical activity in urban and rural adults of various socioeconomic backgrounds in the United States. Journal of Epidemiology and Community Health, 57(1), 29-35.

Pratt, M., Macera, C. A., & Blanton, C. (1999). Levels of physical activity and inactivity in children and adults in the United States: current evidence and research issues. Medicine and Science in Sports and Exercise, 31(11), S526-533.

Proctor, M. H., Moore, L. L., Singer, M. R., Hood, M. Y., Nguyen, U. S., & Ellison, R. C. (1996). Risk profiles for non-communicable diseases in rural and urban schoolchildren in the Republic of Cameroon. Ethnicity & Disease, 6(3-4), 235-243.

Raudsepp, L., & Pall, P. (1999). The physical activity of Estonian primary school children. European Journal of Physical Education, 4(1), 65-74.

Sallis, J. F., Prochaska, J. J., & Taylor, W. C. (2000). A review of correlates of physical activity of children and adolescents. Medicine and Science in Sports and Exercise, 32(5), 963-975.

Taks, M., Renson, R., Beunen, G., Claessens, A., Colla, M., Lefevre, J., et al. (1991). Sociogeographic variation in the physical fitness of a cross-sectional sample of Flemish girls 13 to 18 years of age. American Journal of Human Biology, 3(5), 503-513.

Tanner, J. M. (1962). Growth at adolescence, with a general consideration of the effects of hereditary and environmental factors upon growth and maturation from birth to maturity (2d ed.). Oxford: Blackwell Scientific Publications.

Tognarelli, M., Picciolli, P., Vezzosi, S., Isola, A., Moretti, F., Tommassetto, E., et al. (2004). Nutritional status of 8-year-old rural and urban Italian children: a study in Pistoia, Tuscany. International Journal of Food Sciences and Nutrition, 55(5), 381-387.

World Health Organisation (1995). Epidemiology and prevention of cardiovascular diseases in elderly people (No. 853): World Health Organization.

Hellenic National Statistics Service (1996). Statistics 1994-1995. Athens

Submitted: 28-11-2009
Accepted: 11-2-2010

Correspondence to: P. Tsimeas, Department of Sports and Exercise Science, Thessaly University, Trikala, Greece, ptsimeas@pe.uth.gr

- References have been cited in the Greek (printed) version of the manuscript