ISSN 2084-6002

Opole University of Technology
University of Balearic Islands
State Higher Vocational School
in Raciborz

Journal of Physical Education & Health

Social perspective

Volume 4
Issue 6
2015

ISSN 2084-6002

Opole University of Technology
University of Balearic Islands
State Higher Vocational School
in Raciborz

Journal of Physical Education & Health

Social perspective

Volume 4
Issue 6
2015

Published by: Opole University of Technology
in association with: University of Balearic Islands
State Higher Vocational School in Raciborz

Editorial Office Address:

Politechnika Opolska
Wydział Wychowania Fizycznego i Fizjoterapii
ul. Prószkowska 76
45-758 Opole
budynek nr 9 p. 23

www.jpe-health.pwsz.raciborz.edu.pl

jpe_health@onet.eu

Administrative editor: Katarzyna Kasowska
Technical editor: Janusz Krajewski
Correction: Rachael Sumner

ISSN 2084-6002

Contents

Original Papers

Miriam Seyda, Henk Erik Meier

RELATIONS BETWEEN SOCIAL INEQUALITIES AND EFFECTS OF INCREASED AVAILABILITY OF PHYSICAL EDUCATION ON CHILDREN´S HEALTH – A LONGITUDINAL STUDY OF ELEMENTARY SCHOOLS 5

Emre Belli, Ali Gürel Goksel, Ali Gürbüz

EXPLORING THE INSTITUTIONAL IMAGE OF THE UNIVERSITY IN RELATION TO STUDENTS OF THE DEPARTMENT OF PHYSICAL EDUCATION AND SPORTS 15

Bożena Wojciechowska–Maszkowska, Marcin Wieloch

MUSCULAR ENDURANCE AND STRENGTH AMONGST BOYS AGED FROM 11 TO 13 YEARS 23

Vinicius Barroso Hirota, Danilo Andreson de Lima, Carlos Eduardo Lopes Verardi

LEADERSHIP DIMENSIONS PREFERRED AMONGST BRAZILIAN SOCCER COACHES 31

V. P. Guba, S. L. Skorovich, V. V. Marinich, A.Stuła,

AN INTEGRAL ESTIMATION OF THE FUNCTIONAL STATUS OF THE EXTERNAL RESPIRATORY SYSTEM OF QUALIFIED FUTSAL PLAYERS 37

Information

Physical Education Teacher 43
Information for Authors 44

Journal of Physical Education & Health, 2015, vol. 4 (6), 5-14

RELATIONS BETWEEN SOCIAL INEQUALITIES AND EFFECTS OF INCREASED AVAILABILITY OF PHYSICAL EDUCATION ON CHILDREN´S HEALTH – A LONGITUDINAL STUDY OF ELEMENTARY SCHOOLS

Miriam Seyda[1], Henk Erik Meier [2]

[1] University of Münster, Institute for Sport and Exercise Science, Department of Physical Education, Play and Sport in Childhood

[2] University of Münster, Institute for Sport and Exercise Science, Department of social science in sports

Abstract

The obesity crisis and health inequalities among children have directed the attention of policymakers to school-based interventions. Accordingly, the state government of North Rhine-Westphalia commissioned a pilot project amongst daily PE classes in primary schools. An evaluation study was conducted testing 520 children from seven project schools and 142 children from non-project schools over a four-year period. Body mass index (BMI) served as an indicator of the children's health status. Further health-related aspects were measured in terms of motoric capacities. Moreover, sports club participation was measured. The results suggest that the daily PE class does not represent a universal remedy for specific health deficits. However, disadvantaged children - in particular girls - might benefit from school-based interventions.

Key words: *School-based interventions, obesity, health, SES, primary schools, physical education, evaluation study, childhood*

Introduction

There is growing concern about the health status of children in developed societies. First, an obesity crisis among children, which appears to be linked to lack of physical activity, is likely to cause different diseases, premature mortality and long-term morbidity [31: 12]. Meta-analysis suggests that being overweight increases the risk of cardiovascular diseases among school-aged children [10].

Second, secular trends in living conditions, in particular a sedentary lifestyle, and social inequalities appear to result in a lack of physical activity, especially among children and adolescents with lower socioeconomic status (SES) [1; 2]. This is particularly detrimental since children's health benefits from physical activity in numerous ways [9; 17; 30].

Thus, policymakers have directed their attention to school-based interventions as they can involve every child in health-related interventions regardless of SES [32] and can use the superior infrastructure provided by the school setting [10]. However, the efficacy of these interventions is controversial. Thus, the research presented here reports on the evaluation of a school-based intervention initiated by the government of North Rhine-Westphalia. The results are particularly interesting because of the longitudinal quality of the data gathered and the character of North Rhine-Westphalia as one of the most densely and diversely populated German federal states.

Background

The impact of secular trends in living conditions and social inequalities on the health and physical activity of German children and youngsters has been controversially discussed [26]. Whereas participation rates in sports clubs have increased and new forms of physical activity have emerged [28], there seems to be a general lack of exercise, a decline in physical activity and

motoric capabilities, which are likely to have detrimental health consequences [4].

In addition, the impact of SES on children's health, fitness and motoric capabilities is debated. SES correlates with children's motoric capabilities [19; 26;]. Moreover, sports club membership among children and youngsters in Germany persistently shows a strong middle-class bias [19; 21;], which is problematic because sports club membership correlates with better motoric capabilities [27]. These social inequalities have gained increasing attention because Germany is experiencing an obesity crisis leading to negative medical and psychosocial consequences [7; 12;]. Obesity is also more prevalent among children with a lower SES [cf. 24; 25].

Therefore, the German federal government has commissioned basic research [5; 22] and is pursuing a coordinated strategy to address children's health [6]. However, school education falls under the jurisdiction of the German federal states. Thus, the pilot project reported here was commissioned by the state government of North Rhine-Westphalia. The project aimed to increase the provision of methodically instructed exercise sessions and to help schools to establish an exercise-focused profile. Thus, between the school terms of 2004/05 and 2007/08, 25 pilot primary schools implemented a daily PE class.

Notwithstanding the good arguments in favour of school-based interventions, the evidence for their efficacy is ambiguous. An early meta-review suggested that school-based interventions are effective across diverse settings and target populations [18]. The same conclusion seems to apply to after-school programs [3]. The majority of studies on school-based interventions reported positive effects on motor performance, physical activity and knowledge of physical activity and suggested a positive impact on BMI [8; 20]. However, the effects of interventions appeared to be small to negligible [23]. Interventions had limited success in reducing BMI or body fat in children [13; 15]. Moreover, intervention effects appear to differ for target populations. Accordingly, girls benefit most but so too do participants with higher SES [10; 8; 16]. However, evidence on the effects on specific target populations is far from conclusive.

Thus, this study evaluates the effect of a daily PE class program on health status as well as on physical ability and activity. Thus, we hypothesise:

H#1: Children from primary schools participating in the 'daily PE class programme' experience an improvement in health status, motoric skills and physical activity as the program proceeds.

In accordance with previous research, we expect to find a gender effect:

H#2: Any improvement in health status, motoric skills and physical activity should be higher for girls.

Finally, as school-based interventions are intended to compensate for disadvantages resulting from low SES, we test the following hypothesis:

H#3: Any improvement in health status, motoric skills and physical activity should be higher for children with low SES.

Methods

Evaluation study

The daily PE program required the schools to start in the school term 2004/05. Each of the five PE classes per week had to fit into the PE curriculum for the respective grade. Since the schools enjoyed substantial leeway for implementing the daily PE class, the research presented here represents an evaluation but not an interventive study [28]. The evaluation team collected data in February and March 2005, again at the beginning of the third school year (September 2006) and in the fourth school year a few months before the end of the project in February and March 2008. Here, only a fraction of the conducted data is presented.

School sample

The original 25 participating primary schools were sampled to represent the variety in regional settings and primary schools in North Rhine-Westphalia. Factors that were systematically varied included location, SES, infrastructure and resources. After two schools had dropped out, seven of the remaining 23 schools were selected for an in-depth evaluation. In addition, a control group consisting of two non-participating schools was studied. Thus, the design of the evaluation

study followed a longitudinal quasi-experimental logic [2].

Schools were required to assess the SES of their children by rating the share of immigrant children, parental income and the school's social neighbourhood on scales ranging between 1 ('low') and 6 ('high'). These variables were used to construct an index of the SES of a school's intake after the original scores had been recoded. The variables were combined as follows: A 'high SES' was coded when income and social environment were considered high and immigrant share low, a 'medium SES' was coded if all of the variables assumed medium values, and finally, a 'low SES' was coded if income and social neighbourhood were considered to be low and immigrant share to be high. Six of the 23 participating schools were considered as having an intake with a high SES, twelve as having a medium SES intake and five as having a low SES intake. The high and low SES groups show substantial homogeneity (cf. Table 1).

Table 1: Social background of participating and non-participating schools' intake

School ID	Partici-pation	included in evaluation study	Social background	Neighbourhood score (original)[a]	Neighbourhood score (recoded)[b]	Parental income score (original)[a]	Parental income score (recoded)[b]	Immigrant share score (original)[a]	Immigrant share score (recoded)[b]
14	yes	no	High	4	High	4	High	2	Low
21	yes	no	High	4	High	4	High	1	Low
24	yes	no	High	4	High	4	High	1	Low
17	yes	no	High	4	High	3	Medium	2	Low
27	yes	no	High	4	High	3	Medium	2	Low
5	yes	yes	High	4	High	3	Medium	1	Low
13	yes	no	Medium	3	Medium	3	Medium	6	High
16	yes	no	Medium	3	Medium	3	Medium	5	High
11	yes	no	Medium	3	Medium	3	Medium	4	Medium
12	yes	no	Medium	3	Medium	3	Medium	3	Medium
8	yes	yes	Medium	3	Medium	3	Medium	2	Low
26	yes	no	Medium	3	Medium	3	Medium	2	Low
3	yes	yes	Medium	3	Medium	3	Medium	1	Low
25	yes	no	Medium	3	Medium	3	Medium	1	Low
19	yes	no	Medium	3	Medium	2	Low	2	Low
20	yes	no	Medium	3	Medium	2	Low	2	Low
1	yes	yes	Medium	2	Low	2	Low	2	Low
22	yes	no	Medium	2	Medium	2	Low	2	Low
9	no	yes	Medium	3	Medium	3	Medium	2	Low
6	yes	yes	Low	3	Medium	2	Low	6	High
4	yes	yes	Low	2	Low	2	Low	6	High
18	yes	no	Low	2	Low	2	Low	5	High
7	yes	yes	Low	2	Low	2	Low	3	Medium
23	yes	no	Low	1	Low	1	Low	4	Medium
10	no	yes	Low	2	Low	2	Low	3	Medium

Note: a. Likert scale with 1 = 'Low' and 6 = 'High'. b. Recoding procedure is described in the text.

Study population

A total of 520 children from the seven project schools were tested over a four-year period; within the two non-participating schools a control group of 142 children were tested. Gender shares remained constant across all panel waves (girls = 49.77%, boys = 50.23%). The average age equalled at t_1 6.65 years (SD = 0.58), at t_2 8.33 years (SD = 0.52) and at t_3 9.75 years (SD = 0.61).

The body mass index (BMI) was used as an indicator of the children's health status. Since BMI cannot be treated as a continuous dependent variable, a binary variable was generated: *Normal BMI* assuming the value of '1' for all BMI values between the 10^{th} and 90^{th} percentile of the reference sample, and '0' for all BMI values outside this range. Thus, '0' indicates both underweight and overweight.

The coordinative performance of the children was measured by the Dortmund Coordinative Test for Primary School Pupils [29]. The test distinguishes the ability to coordinate under time pressure (*CuTP*) and the ability for exact motor control (*EMC*). The *CuTP* was measured by the time needed for directing a rubber ring through a slalom course and by the time needed to jump a distance of 20 metres while changing landing legs and direction. Since the mean values of the two tests did not differ significantly, the two values were summarized.

EMC was measured by Likert scales ranging from zero to five for assessing the children's performance in jumping into a standing position, where the children were required to jump into a hoop and to stand on the landing leg for 10 seconds. Furthermore, the children were required to jump rhythmically over a course while continuously switching from one-legged hopping to two-legged jumping. The point values achieved in the two tasks were summarized. Finally, sports club participation was measured by a survey item (*Club*).

The longitudinal quality of the data allowed the creation of a panel data set. Since only effects of the daily PE class program are of interest, we use fixed effect models for estimating the magnitude of causal factors, because these models are unbiased and consistent. Yet, time-invariant variables are excluded [14].

In the multivariate analyses performed, *BMI*, *CuTP, EMC* and *Club* served as dependent variables. The set of independent variables comprises dummy variables for schools participating in the daily PE class project (*Daily PE*), low social status background intake (*Low*) and sex (*Sex*) and a time period variable (*Time*).

Results

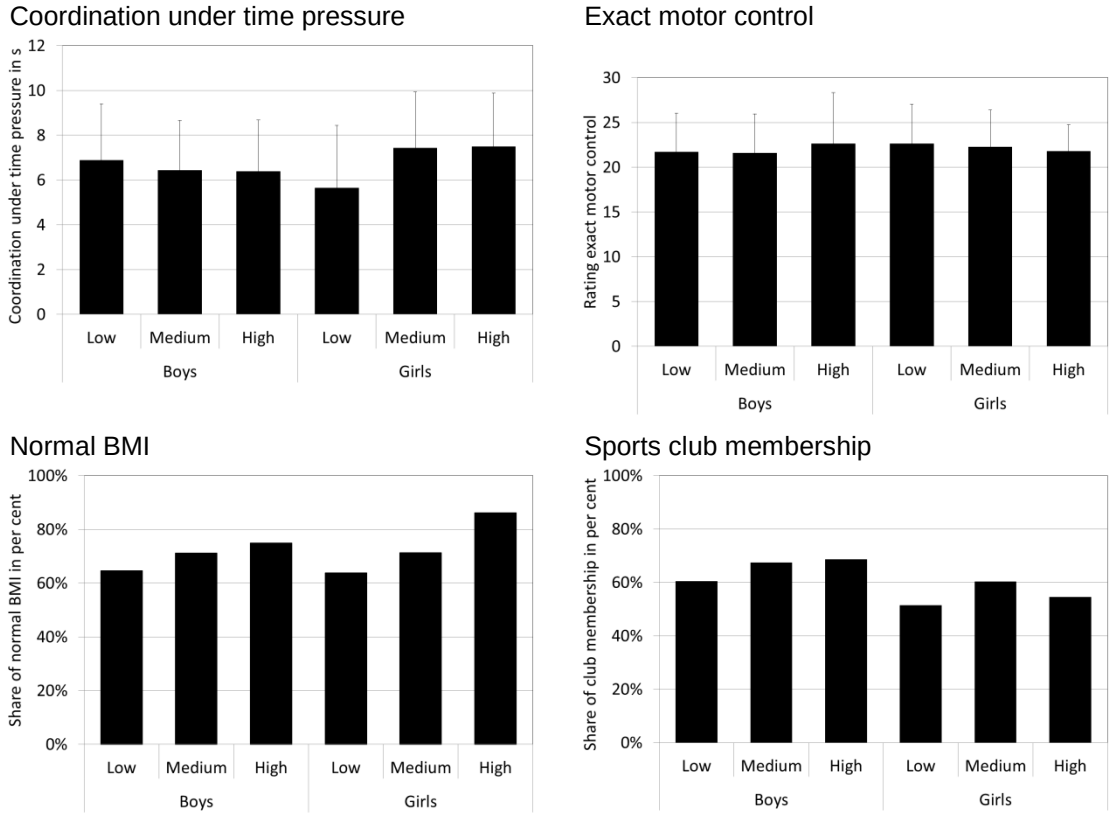
Descriptive analysis contradicts claims of an obesity crisis since children have increasingly reached normal weight. However, motoric capabilities have declined over time, although sports club participation has increased (cf. Table 2).

Table 2. Descriptive statistics for each panel wave

Variables	T_1	T_2	T_3
Age (in years)	6.65 ± 0.58	8.33 ± 0.52	9.75 ± 0.61
Sex (share)			
Girls	49.77	49.77	49.77
Boys	50.23	50.23	50.23
Socio-economic status			
Low	42.45	42.45	42.45
Medium	53.62	53.62	53.62
High	3.93	3.93	3.93
Coordination under time pressure	5.65 ± 2.38	7.11 ± 2.18	8.38 ± 1.87
Exact motor control	25.84 ± 4.33	21.18 ± 2.72	18.88 ± 2.12
Normal BMI (share)	63.22	71.60	71.12
Sports club membership (share)	41.73	68.60	69.81

Graphical depiction suggests that SES seems to influence coordination under time pressure (*CuTP*) for boys but not for girls. The ability for exact motor control (*EMC*) declines with higher SES for girls but not for boys. For both sexes, the likelihood of achieving normal weight increases with SES. Higher SES seems also to increase the likelihood of sports club membership for boys but not for girls (*Club*) (cf. Figure 1).

Figure 1. Motoric skills, normal BMI and sports club membership according to gender and SES



Note: Data from several panel waves were pooled, 'low', 'medium' and 'high' refer to SES.

Multivariate analyses with the pooled data set confirmed that there is a strong sex and age effect but no SES effect on *CuTP*; in contrast *EMC* is dependent on sex, age and SES. The likelihood of gaining normal *BMI* is dependent on SES and age but not on children's sex, whilst for *Club* membership all three independent variables are relevant (cf. Table 3). Thus, children with higher SES perform better in every respect. Girls perform worse than boys in terms of coordination under time pressure but better in exact motor control and are less likely to be members of sports clubs. While motoric capabilities decrease with age, the likelihood of having normal weight and of being a sports club member increases with age.

Table 3. Multivariate analyses with the pooled dataset

Independent variables	CuTP[a]	EMC[a]	BMI[b]	Club[b]
Constant	0.468	38.378***	-0.181	-2.091***
	(0.356)	(0.559)	(0.360)	(0.341)
SES[c]	-0.167	-0.154***	0.351**	0.270**
	(0.100)	(0.157)	(0.103)	(0.098)
Sex[d]	0.886***	0.514**	0.055	-0.360**
	(0.113)	(0.177)	(0.114)	(0.110)
Age	0.762***	-2.019***	0.089*	0.312***
	(0.041)	(0.065)	(0.042)	(0.041)
N	1,424	1,419	1,426	1,463
Adjusted R^2 (Pseudo R^2)	0.216	0.407	0.009	0.041

Note: CuTP = Cooordination under time pressure, EMC = Exact motor control, BMI = Normal BMI, Club = Sports club membership. Standard errors in parentheses. a. OLM regression. b. Logistic regression. c. Socio-economic status, low SES=0, medium SES=1, high SES=2; d. Dummy variable, female=1, male=0. *p < 0.05, **p < 0.01, ***p < 0.001.

Panel analyses are conducted in three steps: First, the models include only the variable *Time* and interactions with *Daily PE* (models a). Then, interactions with *Low SES* and *Sex* were added to account for conditional effects of the daily PE class program on children from a low social background and on girls (models b). Finally, the interaction term *Low SES×Sex* was included to account for the possibility that girls from a low social background would benefit most from the program (models c).

Table 4. Capacity for coordination under time pressure

Independent variables	Model 1a	Model1b	Model1c
Constant	4.374***	4.385***	4.384
	(0.129)	(0.129)	(0.129)
Time	1.353***	1.506***	1.741***
	(0.129)	(0.231)	(0.269)
Time×Daily PE	-0.022	-0.336	-0.556
	(0.147)	(0.257)	(0.297)
×Low SES			
Children from *non-participating* schools with low social background		0.128	-0.390
		(0.260)	(0.400)
Children from *participating* schools with low social background		0.166	0.127
		(0.143)	(0.203)
×Sex			
Girls from *non-participating* schools		-0.362	-0.762*
		(0.262)	(0.351)
Girls from *participating* schools		0.190	0.159
		(0.140)	(0.181)
×Low SES×Sex			
Girls from *non-participating* schools with low social background			0.895
			(0.526)
Girls from *participating* schools with low social background			0.077
			(0.286)
N	1,489	1,484	1,484
R^2_{Within}	0.363	0.367	0.370
$R^2_{Between}$	0.153	0.143	0.116
$R^2_{Overall}$	0.211	0.213	0.196

Note: Method is fixed effects regression using the xtreg command in STATA, standard errors in parentheses.
*p < 0.05, **p < 0.01, ***p < 0.001.

Since high values for *CuTP* indicate fewer coordinative skills, an improvement in children's performance by the daily PE class program would be reflected by a negative sign of the coefficient for *Time×Daily PE*. While children's performance decreases over time, none of the models strongly supports the idea of a significant improvement effect of the daily PE class. Only in the final model is the coefficient for the daily PE program negative and almost significant (p=0.061). Yet, the coefficient signs for the interaction terms for *Daily PE×Time×Low SES* and *Daily PE×Time×Sex* are at odds with theoretical expectations.

For *ECM*, where higher values denote better skills, the coefficient for the interaction *Daily PE×Time* should be positive and significant (cf. Table 5). Again, abilities decline over time, and evidence for a positive effect of the daily PE class is rather weak. The only significant effect found in the final model (model 2c) is that non-participating girls with low SES experience a decline in their ability for exact motor control. The positive effect of program participation on participating girls is almost significant (p=0.054). Thus, the daily PE class might have prevented a decline in the motoric skills of participating girls.

Table 5. Capacity for exact motor control

Independent variables	Model 1a	Model1b	Model1c
Constant	28.648***	28.655***	28.657***
	(0.163)	(0.161)	(0.161)
Time	-3.241***	-2.599***	-2.980***
	(0.164)	(0.289)	(0.334)
Time×Daily PE	-0.126	-0.679*	-0.383
	(0.186)	(0.321)	(0.369)
×Low SES			
Children from *non-participating* schools with low social background		-0.908**	-0.045
		(0.326)	(0.503)
Children from *participating* schools with low social background		-0.540**	-0.315
		(0.179)	(0.254)
×Sex			
Girls from *non-participating* schools		-0.409	0.250
		(0.329)	(0.440)
Girls from *participating* schools		0.257	0.434
		(0.175)	(0.225)
×Low SES×Sex			
Girls from *non-participating* schools with low social background			-1.484*
			(0.660)
Girls from *participating* schools with low social background			-0.444
			(0.356)
N	1,482	1,478	1,478
R^2_{Within}	0.693	0.700	0.702
$R^2_{Between}$	0.311	0.253	0.239
$R^2_{Overall}$	0.427	0.390	0.380

Note: Method is fixed effects regression using the xtreg command in STATA, standard errors in parentheses. *p < 0.05, **p < 0.01, ***p < 0.001.

Table 6. Likelihood of normal BMI

Independent variables	Model 3a	Model 3b	Model 3c
Time	-0.406	-0.225	-0.000
	(0.279)	(0.429)	(0.463)
Time×Daily PE	0.844**	0.322	-0.037
	(0.300)	(0.463)	(0.501)
×Low SES			
Children from *non-participating* schools with low social background		-0.236	-0.840
		(0.570)	(0.784)
Children from *participating* schools with low social background		0.360	0.733*
		(0.230)	(0.329)
×Sex			
Girls from *non-participating* schools		-0.167	-0.892
		(0.578)	(0.878)
Girls from *participating* schools		0.388	0.725*
		(0.228)	(0.311)
×Low SES×Sex			
Girls from *non-participating* schools with low social background			1.441
			(1.213)
Girls from *participating* schools with low social background			-0.779
			(0.469)
N	477	477	477
MacFadden Pseudo R^2	0.054	0.072	0.085
Cox and Snell Pseudo R^2	0.038	0.051	0.060

Note: Method is fixed effects logistic regression using the xtlogit command in STATA, standard errors in parentheses. *p < 0.05, **p < 0.01, ***p < 0.001.

For examining the program's effect on the likelihood of achieving normal weight (*BMI*), we conducted several logistic panel regressions, which required excluding cases without variation in weight status (cf. Table 6). According to the basic model, the probability of children having a normal BMI declines significantly over time while program participation increases the likelihood (model 3a). The final model suggests that the probability of gaining normal weight significantly increases for participating children with a low SES, and in particular girls (model 3c).

Table 7. Likelihood of sports club membership

Independent variables	Model 4a	Model 4b	Model 4c
Time	0.958***	0.365	0.113
	(0.231)	(0.425)	(0.478)
Time×Daily PE	0.093	0.875	0.971
	(0.261)	(0.479)	(0.535)
×Low SES			
Children from *non-participating* schools with low social background		0.335	0.781
		(0.481)	(0.651)
Children from *participating* schools with low social background		-0.208	0.130
		(0.246)	(0.373)
×Sex			
Girls from *non-participating* schools		0.814	1.300
		(0.483)	(0.687)
Girls from *participating* schools		-0.179	0.101
		(0.247)	(0.334)
×Low SES×Sex			
Girls from *non-participating* schools with low social background			-0.984
			(0.956)
Girls from *participating* schools with low social background			-0.609
			(0.498)
N	639	639	639
MacFadden Pseudo R^2	0.250	0.259	0.264
Cox and Snell Pseudo R^2	0.166	0.172	0.175

Note: Method is fixed effects logistic regression using the xtlogit command in STATA, standard errors in parentheses. *p < 0.05, **p < 0.01, ***p < 0.001.

Finally, the effect of the daily PE class on sports club membership was assessed. In short, the results contradict the idea that the program increased the probability of club membership (Table 7).

Discussion

Widespread concerns about a so-called obesity crisis, declining physical activity, deteriorating motoric capabilities among children and their detrimental long-term health effects have inspired policymakers to initiate school-based interventions in order to promote physical activity. Given the controversial efficacy of such programs, the research presented here evaluates the 'Daily PE Class' – a program initiated by the federal state of North Rhine-Westphalia.

First, the data cast doubts on the concept of an obesity crisis, although motoric capabilities seem to decline. The data support the idea that SES is relevant for children's health status, motoric capabilities and sports club participation. However, SES impact differs according to sex.

The study supports only to a limited extent optimism for school-based intervention programs. Consistent evidence for a positive impact of the daily PE program was found for the children's likelihood of achieving normal BMI. The idea that girls should particularly benefit from a school-based intervention received some support. According to the analyses, girls from participating schools had a higher likelihood of

achieving normal weight. Other findings contradicted expectations concerning gender effects.

Finally, expectations of greater program benefits for children with a low SES received only very limited support. The program appears to have reduced the decrease of motoric skills among girls with a low SES. In addition, the likelihood of participating children with low SES achieving normal BMI increased.

Taken together, the findings support further scepticism regarding the efficacy of school-based intervention programs. The daily PE class did not result in significant improvements in motoric capabilities, health status or sports club participation across the entire population of participating children. However, specific target populations that are less likely to participate in sports clubs might benefit from school-based intervention programs.

Three methodological limitations have to be mentioned. First, leeway in implementation inevitably implied some uncontrolled variation between schools. Second, SES was only measured at the school and not at an individual level. Finally, the evaluation study did only focus on one dimension of motoric capabilities.

BIBLIOGRAPHY

1. Baquet G, Ridgers ND, Blaes A, et al. (2014) Objectively assessed recess physical activity in girls and boys from high and low socioeconomic backgrounds. *British Medical Council Public Health* 14: 92.
2. Baumann AE, Sallis JF, Dzewaltowski DA, et al. (2002) Toward a better understanding of the influence on physical activity. The role of determinants, correlates, causal variables, mediators, and confounders. *American Journal of Preventive Medicine* 23(2S): 5-14.
3. Beets MW, Beighle, Erwin et al. (2009) After-school program impact on physical activity and Fitness. A meta-analysis. *American Journal of Preventive Medicine* 36(6): 527-537.
4. Bös K (2003) Motorische Leistungsfähigkeit von Kindern und Jugendlichen. In: Schmidt W, Hartmann-Tews U, Brettschneider WD (eds) *Erster Deutscher Kinder- und Jugendsportbericht*. Schorndorf: Hoffmann, 85 -107
5. Bös K, Worth A, Opper E, et al. (2009) *Motorik-Modul: Motorische Leistungsfähigkeit und körperlich-sportliche Aktivität von Kindern und Jugendlichen in Deutschland.* Baden-Baden: Nomos-Verlag.
6. BMG [Bundesministerium der Gesundheit] (2008) *Strategie der Bundesregierung zur Förderung der Kindergesundheit*. Berlin: Bundesministerium der Gesundheit.
7. Cale L, Harris J (2013) Every child (of every size) matters in physical education! Physical educator's role in childhood obesity. *Sport, Education and Society* 18(4): 433-452.
8. Demetriou Y, Höner O (2012) Physical activity interventions in the school setting: A systematic review. *Psychology of Sport and Exercise* 13: 186-196.
9. Eklund U, Luan J, Sherar LB, et al. (2012) Moderate to vigorous physical activity and sedentary time and cardiometabolic risk factors in children and adolescents. *Journal of American Medical Association* 307(7): 704-712.
10. Fairclough JS, Hackett AF, Davies IG, et al. (2013) Promoting healthy weight in primary school children through physical activity and nutrition education: a pragmatic evaluation of the CHANGE! Randomised intervention study. *British Medical Council Public Health* 13: 626.
11. Friedmann C, Heneghan C, Mahtani K, et al. (2012) Cardiovascular disease risk in healthy children and its association with body mass index: systematic review and a meta-analysis. *British Medical Journal* 345: e4759.
12. Galvan M, Uauy R, López-Ródriguez G, et al. (2013) Association between childhood obesity, cognitive development, physical fitness and social-emotional wellbeing in a transitional economy. *Annuals of Human Biology* Early online: 1-6.
13. Guerra PH, Nobre, MR, Silveira JA, et al. (2013) The effect of school-based physical activity interventions on body mass index: a meta-analysis of randomised trials. *Clinics* 68(9): 1263-1273.
14. Halaby CN (2004) Panel models in sociological research: Theory into practice. *Annual Review of Sociology 30*: 507-544.
15. Harris KC, Kuramoto LK, Schulzer M, et al. (2009) Effect of school-based physical activity interventions on body mass index in children: a meta-analysis. *Canadian Medical Association Journal* 180(7): 719-725.
16. Höner O, Demetriou Y (2014) Effects of a health-promotion programme in sixth grade German students' physical education. *European Journal of Sport Science* 14(1): 341-351.
17. Janssen I, LeBlanc AG (2010) Systematic review of health benefits of physical activity and fitness in school-aged children and youth. *International Journal of Behavioral Nutrition and Physical Activity* 7: 40.

18. Kahn EB, Ramsey LT, Brownson RC, et al. (2002) The effectiveness of interventions to increase physical activity. A systematic review. *American Journal of Preventive Medicine*. 22(4S): 73-104.
19. Klein K, Fröhlich M, Emrich E (2011) Sozialstatus, Sportpartizipation und sportmotorische Leistungsfähigkeit. *Sport und Gesellschaft* 8: 54-79.
20. Kriemler S, Meyer U, Martin E, et al. (2013) Effect of school-based interventions on physical activity and fitness in children and adolescents: A review of reviews and systematic update. *British Journal of Sports Medicine* 45(11): 923-930.
21. Lämmle L, Worth A, Bös K. (2012) Socio-demographic correlates of physical activity and physical fitness in German children and adolescents. *European Journal of Public Health*. doi: 10.1093/eurpub/ckr191.
22. Lange M, Kamtsiuris P, Lange C, et al. (2007) Messung soziodemographischer Merkmale im Kinder- und Jugendgesundheitssurvey (KiGGS). *Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz* 50: 578-589.
23. Metcalf B, Henley W, Wilkin T (2012) The effectiveness of intervention on physical activity of children: systematic review and meta-analysis of controlled trials with objectively measured outcomes. *British Medical Journal* 345: e5888.
24. O'Dea JA, Caputi P (2001) Association between socioeconomic status, weight, age and gender, and the body image and weight control practices of 6- to 19-year-old children and adolescents. *Health Education Research* 16(5): 521-532.
25. O'Dea JA, Chiang H, Peralta LR (2014) Socioeconomic patterns of overweight, obesity but not thinness persist from childhood to adolescence in a 6-year longitudinal cohort of Australian schoolchildren from 2007 to 2012. *British Medical Council Public Health* 14: 222.
26. Pfister G, Reeg A (2006) Fitness as 'social heritage': a study of elementary school pupils in Berlin. *European Physical Education Review* 12(1): 5-29.
27. Scheid V (2009) Motorische Entwicklung in der frühen Kindheit. In: Baur J, Bös K, Conzelmann A, Singer R (eds) *Handbuch Motorische Entwicklung. Beiträge zur Lehre und Forschung im Sport*. Schorndorf: Hofmann, pp. 281-300.
28. Thiele J, Seyda M (2010) Tägliche Sportstunde an Grundschulen in Nordrhein-Westfalen [Daily physical education class in primary schools in North Rhine-Westphalia]. *Spectrum der Sportwissenschaft* 22: 67-82.
29. Thienes G, Starischka S (2005) *Dortmunder Koordinationstest für Grundschulkinder. Testmanual.* University of Dortmund, December.
30. Tittlbach S**,** Sygusch R, Brehm W, et al. (*2011)* Association between physical activity and health in German adolescents. *European Journal of Sport Science 11*(4): 283-291.
31. WHO [World Health Organization] (2012) *Population-based Approaches to Childhood Obesity Prevention*. Geneva: WHO.
32. Woll A, Kurth BM, Opper E, et al. (*2011)* The 'Motoric-Module' (MoMo): physical fitness and physical activity in German children and adolescents. *European Journal of Pediatrics 170(9): 1129-1142.*

Received: June 2015
Accepted: November 2015
Published: December 2015

Correspondence

Assistant Professor Dr **Miriam Seyda**
miriam.seyda@uni-muenster.de

Professor Dr **Henk Erik Meier**
henk.erik.meier@uni-muenster.de

Journal of Physical Education & Health, 2015, vol. 4 (6), 15-22

EXPLORING THE INSTITUTIONAL IMAGE OF THE UNIVERSITY IN RELATION TO STUDENTS OF THE DEPARTMENT OF PHYSICAL EDUCATION AND SPORTS

Emre Belli[1], Ali Gürel Goksel[2], Ali Gürbüz[3]

[1] Ataturk University, Faculty of Sports Science

[2] Marmara University, School of Physical Education and Sports

[3] Mimar Sinan University, Physical Education and Sports

Abstract

This study aims to research the opinions of students attending the School of Physical Education and Sports at Atatürk University and Marmara University with respect to the universities' corporate image.

The questionnaire which was developed by Örer (2006) with additions introduced by Kaya (2013) was used to acquire data about corporate image amongst universities.

The SPSS 16 statistical packet program was used to evaluate the data. During the research, analysis of frequency was used to define demographical features, the t-test to define the difference between corporate images depending on universities and gender, one way analysis of variance (Anova) to define differing empathy levels depending on age, grades and departments, and the Tukey test was applied in order to establish which group causes the dissimilarity.

The research indicates that there are meaningful dissimilarities in sub-dimension of service (p=,000) communication (p=,000), belonging (p=,012), satisfaction (p=,000) and management perspective (p=,000). On the other hand there is no meaningful dissimilarity in support sub-dimension (p=,168). (p<0,05)

Key words: *Image, University, Sports and Physical Education*

Introduction

It is becoming increasingly necessary to establish the relevance of institutions for society in order to ensure their continuity. The actual functioning of such institutions may in fact be of less singificance than the way in which society perceives them. At this point we come across the concept of image. Performance based on strong images of the institutions which want to be appreciated and needed by society and to meet the society's expectations provides positive outcomes.

There is a misunderstanding about the real purpose of image performance which is thought by society to change reality. However, the relation between the image and the reality is not about the refusal of reality, but rather about re-defining reality by using different methods and techniqus (Bakan, 2005).

Institutions are forced to make changes due to developing information technologies and competitive conditions. In recent years, there has been an increased pressure on institutions to explain themselves to all parts of society. All partner groups in the institutions have impressions about these institutions as a result of being affected by their levels of effective communication. For that reason, all partners have images of such institutions (Küçük, 2005). Corporate image is a whole, incorporating all visual, verbal and behavioral elements (Howard, 1998).

Image is a thought developed in people's minds during their relation and interaction with an object, a person or an organization attached to time (Okay, 2000). Corporate image is all

impression, the conveyor or the summary of the organization in people's minds (Wilson, 2001).

The institutions encounter rivalry and outward oriented construction through the effects of globalization. Higher education institutions are also globalized like other institutions. Universities supply their incomes not only domestically but also internationally. Corporate image is an important resource in terms of competing with other institutions and the creation of a positive corporate image has an effect on customers (Flavian, Guinaliu ve Torres, 2005). Universities try to find ways to increase their corporate images to attract academic staff and students and to increase their share of the economic field (Porter ve Claycomb, 1997; Melewar ve Akel, 2005).

In our country most of the education and training facilities in higher education are undertaken by state universities. However, the number of private universities increase day by day. Meeting the demands of students and their families maintaining quality is a must for higher education institutions. For that reason, testing the corporate image creates an important area of knowledge which can be directed towards corporate strategies (Köktürk, Yalçın ve Çobanoğlu, 2008).

Students' perceptions of educational opportunities and services are becoming increasingly important. As a result, studies based on directing, following and testing students' perceptions about the qualities of service in the field of education should be developed (Wright ve O'neill, 2002).

It is an indispensable reality that universities must develop different strategies to increase and protect their competitive capacities in fields of education where students are treated like customers. Under these circumstances, universities are aware of the corporate image's role as a competitive capacity resource (Melewar ve Akel, 2005).

It is accepted that carrying out studies into corporate image in universities is related to a specific set of circumstances. On the other hand, developments in new knowledge about technology provide new training methods in long-distance education. Besides this, a greater level of fluidity in the transferal of managerial and academic staff will encourage students and teachers from different nations to travel abroad in order to study.(Mazzarol, 1998). These two factors provide a competitive advantage in attracting students and finding jobs for training and research staff together with new financial resources (Landrum, Turrisi ve Harless, 1998). In this way, corporate image is an important factor as a competitive advantage for universities that do not want to encounter negative situations for their future (Parameswaran ve Glowacka, 1995).

Universities are not content with the financial assistance offered by the government for the continuation of their existence. They have difficulty in performing their functions because of insufficient transfer of funds. As a result universities need to find new financial resources. The ability to find new financial resources is related to the creation of a positive and strong image (Cerit, 2006). Universities with a positive corporate image obtain new financial resources for the purpose of research from different industrial enterprises and through the help of different institutions and foundations. Thus, they have the power to continue their research.

Universities with a good corporate image will attract faculty members who are respected and proficient in their fields. Working at highly prestigious universities brings with it credentials and a form of social pleasure for faculty members. Excepting these factors, an increase in the number of universitıes in our country for the past ten years has resulted in strong competition in this field. Universities which aim to appeal to students need to be different in terms of market and sector conditions. Uniqueness should be observed both in corporate identity and image (İbicioğlu, 2005). If universities have negative corporate images it will be impossible for them to reach their economic and social goals in the long term because of the difficulty in finding students.

MATERIAL AND METHODS

This study aims to research the opinions of students who attend Besyo in Atatürk University and Marmara University with regard to these universities' corporate images.

While the research groups include the students at the school of Physical Education and

Sports at Marmara and Atatürk Universities, the sample group consists of 654 students, 223 of whom are women and 431 of whom are men.

The questionnaire which was developed by Örer(2006) with additions introduced by Kaya (2013) was used to acquire data about corporate image at universities.

The SPSS 16 statistical packet programme was used to evaluate the acquired data and the level of meaningfulness is accepted as ($p<0,05$).

During the research, analysis of frequency was used to define demographical features, t-test to define the difference between corporate images depending on universities and gender, one way analysis of variance (Anova) to define the differences between empathy levels depending on age, grades and departments, and the Tukey test was applied to find out which group causes dissimilarity.

FINDINGS

Table.1 Participants' Information ın terms of Demographic Features

Gender	**N**	**%**
Men	431	65.9
Women	223	34.1
Age	**N**	**%**
Between 17-21 ages	272	41,6
Between 22-26 ages	297	45,4
Age 27 and over	85	13,0
University	**N**	**%**
Atatürk University	356	54,4
Marmara University	298	45,6
Department	**N**	**%**
Coaching	232	35,5
Physical Education Training	167	25,5
Sports Management	255	39,0
Grades	**N**	**%**
Grade 1	183	28,0
Grade 2	173	26,5
Grade 3	163	24,9
Grade 4	135	20,6
Family Habitation Region	**N**	**%**
Marmara	168	25,7
Black Sea	103	15,8
Aegean	29	4,4
Central Anatolia	22	3,4
Mediterranean	45	6,9
Eastern Anatolia	233	35,6
South Eastern Anatolia	29	4,4
Abroad	25	3,8
Total	**654**	**100**

When table 1 is analyzed in terms of gender, it can be seen that 65.9% of the participants are men, 34.1% are women; in terms of age 41.6% are between 17-21 ages, 45.4% are between 22-26 ages, 13% are 27 age and over.

When the table 1 is analyzed in terms of universities, it is seen that 54.4% of participants are at Atatürk University, 45.6% are at Marmara University; in terms of departments 35.5% participants come from the coaching department, 25.5% are at the Physical Education Training department and 39% come from the Sports Management Department.

When table 1 is analyzed in terms of grades, it is seen that 28% of participants are in the first Grade, 26.5% are in Grade 2, 24.9% are in Grade 3 and 20.6% are in Grade 4.

In terms of the region of family habitation, it is seen that 25.7% of participants live in Marmara, 15.8% by the Black Sea, 4.4% by the

Aegean, 3.4% in Central Anatolia, 6.9% come from the Mediterranean region, 35.6% from Eastern Anatolia, 4.4% from South Eastern Anatolia and 3.8% live abroad.

Table.2 Comparison Between the Participants' Opinions about The Universities' Corporate Image Depending on Gender

Sub-dimension	Gender	N	Mean	Std. Deviation	t	P(sig.)
Service	Women	223	2,93	,579	,324	,000*
	Men	431	2,21	,658		
Support	Women	223	3,25	,728	1,728	,168
	Men	431	3,21	,811		
Communication	Women	223	3,17	,725	,226	,000*
	Men	431	2,55	,762		
Belonging	Women	223	3,43	,745	,756	,012*
	Men	431	2,86	,753		
Satisfaction	Women	223	3,30	,778	,700	,000*
	Men	431	2,55	,851		
Management Perspective	Women	223	3,54	,834	,189	,000*
	Men	431	3,02	,845		

*: p<0,05

When the data are analyzed, there are meaningful dissimilarities in the sub-dimension of service (p=,000) communication (p=,000), belonging (p=,012), satisfaction (p=,000) and management perspective (p=,000). On the other hand there is no meaningful dissimilarity in support sub-dimension (p=,168). Women are more satisfied than men with regard to the service sub-dimension when female students (=2,93±,579) are compared to male students (=2,21±,658), at the communication sub-dimension when female students (=3,17±,725) are compared to male students (=2,55±,762), and at the belonging sub-dimension when female students (=3,43±,745) are compared to male students (=2,86±,753). Women students are more satisfied with corporate images of the universities at the satisfaction sub-dimension when female students (=3,30±,778) are compared to male students (=2,55±,851), and at the management perspective sub-dimension when women students (=3,54±,834) are compared to male students (=3,02±,845).

Table.3 Comparison Between the Participants' Opinions about The Universities' Corporate Image Depending on Universities

Sub Dimension	Universities	N	Mean	Std. Deviation	t	P(sig.)
Service	Marmara University	298	2,97	,647	1,686	,092
	Atatürk University	356	2,89	,569		
Support	Marmara University	298	2.91	,742	-1,090	,276
	Atatürk University	356	2.97	,768		
Communication	Marmara University	298	3,19	,718	1,464	,144
	Atatürk University	356	3,11	,753		
Belonging	Marmara University	298	3,42	,777	2,891	,004*
	Atatürk University	356	3,25	,716		
Satisfaction	Marmara University	298	3,30	,828	,985	,325
	Atatürk University	356	3,23	,783		
Management Perspective	Marmara University	298	3,02	,843	,713	,476
	Atatürk University	356	2,97	,834		

*: p<0,05

When the data are analyzed, there is a meaningful dissimilarity in the belonging sub-dimension (p=,004). However there is no meaningful dissimilarity in service (p=,092), support (p=,276), communication (p=,144), satisfaction (p=,325) and management perspective (p=,476). At the belonging sub-dimension when Marmara University's students (=3,42±,777) are compared to Atatürk University's students (=3,25±,716), it is clear that Marmara University's students are more satisfied with their university's corporate image level.

Table.4 Comparison Between the Participants' Opinions about The Universities' Corporate Image Depending on Departments

Sub Dimension	Department	N	Mean	Std. Deviation	F	P(sig.)
Service	Coaching	232	3,03	,667	8,256	,000*
	Physical Education	167	2,97	,603		
	Sports Management	255	2,81	,531		
Support	Coaching	232	3,02	,824	1,977	,139
	Physical Education	167	2,93	,717		
	Sports Management	255	2,89	,714		
Communication	Coaching	232	3,12	,726	,773	,462
	Physical Education	167	3,12	,727		
	Sports Management	255	3,19	,756		
Belonging	Coaching	232	3,31	,787	,363	,696
	Physical Education	167	3,37	,757		
	Sports Management	255	3,31	,708		
Satisfaction	Coaching	232	3,23	,864	1,204	,301
	Physical Education	167	3,35	,831		
	Sports Management	255	3,24	,724		
Management Perspective	Coaching	232	3,02	,846	,308	,735
	Physical Education	167	3,00	,864		
	Sports Management	255	2,96	,815		

*: p<0,05

As seen in the table while there is a meaningful dissimilarity in service sun-dimension (p=,000), there are no meaningful dissimilarities in sub-dimension of support (p=,139), communication (p=,462), belonging (p=,696), satisfaction (p=,301) and management perspective (p=,301). The results of the multiple comparison are seen in Table 5.

Table.5 Multiple comparison results of the participants' opinions about the universities' corporate image depending on departments

Sub-Dimensions	Post Hoc (Tukey Testi)			
	Comparison		Difference between mean	Meaningfulness
Service	Coaching.	Physical Education	,058	,604
		Sports Management	,214	,000*
	Physical Education	Coaching	-,058	,604
		Sports Management	,156	,025*
	Sports Management	Coaching.	-,214	,000*
		Physical Education.	-,156	,025*

*: p<0,05

According to the multiple comparison results, there is a meaningful dissimilarity between sports management and coaching (p=,000), and sports management and physical education depratments (p=,025) at the service sub-dimensions. As a result, students at the Sports Management department (=2,81±,531) are less satisfied with the universities' corporate image at the service sub-dimension than with coaching (=3,03±,667) and physical education training(=2,97±,603)

Table.6 Comparison between the participants' opinions about the universities' corporate image depending on ages

sub dimension	age	n	mean	std. deviation	f	p(sig.)
Service	17-21 age	272	2,95	,610	1,249	,287
	22-26 age	297	2,89	,608		
	27 and over	85	2,99	,590		
Support	17-21 age	272	3,00	,771	1,510	,222
	22-26 age	297	2,89	,732		
	27 and over	85	2,96	,791		
Communication	17-21 age	272	3,13	,731	,551	,577
	22-26 age	297	3,14	,739		
	27 and over	85	3,22	,759		
Belonging	17-21 age	272	3,36	,739	,588	,556
	22-26 age	297	3,31	,730		
	27 and over	85	3,26	,843		
Satisfaction	17-21 age	272	3,30	,789	1,595	,204
	22-26 age	297	3,20	,798		
	27 and over	85	3,36	,864		
Management Perspective	17-21 age	272	3,00	,841	,973	,378
	22-26 age	297	2,95	,829		
	27 and over	85	3,10	,858		

*: p<0,05

when table 6 is analyzed, there is no meaningful dissimilarity in the participants' opinions about the universities' corporate image depending on ages (p>0,05)

DISCUSSION AND CONCLUSION

The opinions of the students attending Besyo in Atatürk University and Marmara University with regard to the universities' corporate image have been researched and the results given below have been concluded.

Where the participants' opinions about their universities' corporate image depending on gender are compared, there are meaningful dissimilarities in the sub-dimensions of service, communication, belonging, satisfaction and management perspective. Besides this, female students' sense of corporate image is more meaningful. Ulucay (2012) concluded that the internal stakeholder group's sense of social responsibility differs in gender and women participants' sense of corporate image level is higher than men's in the research applied at Yasar University with different stakeholder groups. Polat (2011) concluded in his research concerning the relation between university students' sense of corporate image and academic success that female students find the university's corporate image better in proportion to male students. İbicioğlu (2006) decided that male students perceive corporate image in a lower proportion to female students. Şişli (in his research applied in 2012). The universities' corporate image is better for female students in proportion to male students. These findings which show that the participants' opinions about their universities corporate image change depending on gender support our findings. In studies conducted by Cerit (2006), Cankurtaran and Özbek (2012) there are no meaningful dissimilarities between corporate image and gender. These findings contrast with our findings.

The differences in corporate image between men and women are caused by family habitation regions and may also be caused by the students' aspirations, coming from rural life to urban life or from urban life to rural life, the socio-cultural life of their families, or social aspirations which may be dependent on gender.

As a result of comparison between the participants' opinions about the universities' corporate image depending on universities, Marmara University students are more satisfied than Ankara University students. This result may result from the geographic position and the cities' bigger size and the availabilities of clubs, facilities and job opportunities.

At the service sub-dimension of comparison between the participants' opinions about the universities' corporate image depending on departments, the mean of students at the sports management department is lower than that of students from the physical education and coaching departments. This result may occur from universities' inadequate attitudes towards big teams due to a lack of awareness of the value of sports management students. 10% of sports management students cannot be employed due to the limited quota in KPSS exam applications which has doubled in years. Schools of physical education and sports and physical education sports science faculties have big roles to play in changing this situation. Universities ensure that students graduating from these departments have relevant social skills by creating agreements and protocols with big sport clubs and youth services and encouraging the sports ministry to notice these students.

In conclusion, educational institutions which invested in sports education should create a good corporate image in order to attract new students and to meet the students' expectations and satisfaction.

This can be done through environmental planning, renewing schools' physical environment, increasing recreation areas and sports fields and improving them, solving employment problems by forming positive relations with sports clubs, federations and youth services and the sports ministry, meeting the need for academic and administrative staff, and increasing standards, developing library and laboratory services, arranging national and international panels, symposiums and congresses, and enhancing the range and number of social activities.

BIBLIOGRAPHY

1. Bakan, Ö. (2005). Kurumsal İmaj. Tablet Kitapevi. Birinci Basım. Konya. s.1.
2. Cankurtaran, T. ve Özbek, O. (2012). "Öğrenci algılarına göre beden eğitimi ve spor
3. yüksekokullarının kurumsal imajı",12. Uluslararası Spor Bilimleri Kongresi, 12- 14 Aralık, Denizli, 1836-1838.
4. Cerit, Y. (2006). Eğitim Fakültesi Öğrencilerinin Üniversitenin Örgütsel İmaj Düzeyine İlişkin Algıları. Kuram ve Uygulamada Eğitim Yönetimi Dergisi. Sayı 47. s:343-365.
5. Flavian, C., Guinaliu, M. and Torres, E. (2005), The influence of corporate image on consumer trust: A comparative analysis in traditional versus internet banking, Internet Research, 14(4), 447-470.
6. Howard, S. (1998). Corporate Image Management. Singapore: Butterworth- Hienemann.
7. İbicioğlu, H. (2005). Üniversite Öğrencilerinde Kurumsal imaj Algılamalarını Etkileyen Faktörlere İlişkin SDÜ. İİBF. Öğrencilerine Yönelik Bir Araştırma.
8. Süleyman Demirel Üniversitesi İİBF. Dergisi, 10 (2), 59-73.
9. Kaya, B. (2013). Üniversitelerde İmaj Pazarlaması: Bozok Üniversitesi'nin Kurumsal İmajının Öğrenciler Açısından Ölçülmesi, Bozok Üniversitesi, Sosyal Bilimler Enstitüsü, Yüksek Lisans Tez,Yozgat.
10. Köktürk S., Yalçın., M. ve Çobanoğlu, E. (2008). Kurum İmajı Oluşumu ve Ölçümü. Ankara: Beta Basım Medya.
11. Küçük, F. (2005). Kurum İmajı Açısından Kurumsal İletişim. Fırat Üniversitesi Doğu Anadolu Bölgesi Araştırma ve Uygulama Merkezi. 3(2). s:45-52.
12. Landrum, R.E., Turrisi, R. ve Harless, C. (1998) University image: the benefits of assessment and modeling. Journal of Marketing for Higher Education, 9(1), 53-68.
13. Mazzarol, T. (1998). Critical success factors for international education marketing. International Journal of Educational Management, 12 (4), 163-175.

14. Melewar, T.C., Akel, S. (2005). The role of corporate identity in the higher education sector. A case study. Corporate Communications: An International Journal, 10(1), 41-57.
15. Okay, A. (2000). Kurum kimliği. Ankara: Media Cat Yayınevi.
16. Örer, L. (2006); "Kahramanmaraş Sütçü İmam Üniversitesi'nin Kurumsal İmajının Öğrenciler Açısından Ölçülmesi Üzerine Bir Alan Çalışması", Yayınlanmamış Yüksek Lisans Tezi, Danışman: Salih Yeşil, Kahramanmaraş Sütçü İmam Üniversitesi Sosyal Bilimler Enstitüsü, Kahramanmaraş.
17. Parameswaran, R. ve Glowacka, A.E. (1995) University image: an information processing perspective. Journal of Marketing for Higher Education, 6(2), 41-56.
18. Polat, S. (2011). Üniversite Öğrencilerinin Örgütsel İmaj Algıları İle Akademik Başarıları Arasındaki İlişki Düzeyi. Kuram ve Uygulamada Eğitim Bilimleri, 11(1), 249-262
19. Porter, S. S., Claycomb, C. (1997). The influence of brand recognition on retail store image. Journal of Product and Brand Management, 6(6), 373-387.
20. Şişli, G. (2012). Kurum Kültürü ve Kurumsal İmaj İlişkisi Devlet ve Vakıf Üniversiteleri Üzerinde Bir Uygulama "Celal Bayar Üniversitesi Sosyal Bilimler Enstitüsü, Manisa.
21. Uluçay, D.M.T. (2012). Yaşar Üniversitesi Kurumsal İmajının Üniversitenin Farklı Paydaş Grupları Tarafından Algılanışı. Yayınlanmamış Doktora Tezi, Anadolu Üniversitesi Sosyal Bilimler Enstitüsü, Eskişehir: Türkiye.
22. Wilson, A. (2001). Corporate reputation: Seeking a definition. Corporate Communications, 6(1), 24-30.
23. Wright, C. ve O'neill, M. (2002). Service quality evaluation in the higher education sector: an empirical investigation of students'perceptions. Higher Education Research & Development, 21 (1), 23-39.

Received: August 2015
Accepted: November 2015
Published: December 2015

Correspondence

Emre.Belli
E-mail: emre.belli@atauni.edu.tr

Ali Gürbüz
E-mail: ali.gurbuz@msgsu.edu.tr

Journal of Physical Education & Health, 2015, vol. 4 (6), 23-30

MUSCULAR ENDURANCE AND STRENGTH IN BOYS AGED FROM 11 TO 13 YEARS

Bożena Wojciechowska–Maszkowska, Marcin Wieloch

Faculty of Physical Education and Physiotherapy, Opole University of Technology, Poland

Abstract

The psychophysical development of humans is genetically determined and influenced by a number of external factors. Nowadays, impacts on the physical development and physical ability of young men are caused by such phenomena as acceleration and civilizational or urban changes. Monitoring of changes in development and the influence of different factors seems to be justified as it is related to the understanding of processes and the introduction of preventive measures in the field of health and physical fitness for future generations. New concepts for testing human physical abilities seem to focus on utilitarian targets related to health needs and daily human activities.

The study was performed on a group of 211 boys from an urban area, including 75 at the age of 11, 74 at the age of 12 and 62 at the age of 13. The study examined the strength of abdominal and trunk muscles (sits-up from a lying position), shoulder girdle and lower extremity muscles (overhang on a bar), and explosive strength of upper limbs (forward and backward medicine ball throw). Boys at the age of 11 years achieved the shortest distances, and boys at the age of 13 the longest distances in forward medicine ball throws. The results of the attained distances in backward medicine ball throws were also better in older boys compared to younger ones. The results of the muscle endurance tests were different. In both attempts, boys at the age of 12 attained better results than their younger and older colleagues. The development of strength abilities in boys between the age of 11 and 13 years has stable progress, while the observed differences in muscle endurance in boys at the age of 13 require further monitoring and further examination of their impact in terms of quality and quantity in boys of prepubertal age.

The ***Key words:*** *motor skills, strength skills, muscle endurance, puberty*

Introduction

Human physical development is a complex process leading to the achievement of full maturity as a morphological and functional entity (biological maturity). Motor development as a multidimensional process is disclosed in particular motor skills, which are determined genetically, and by a number of external factors, which affect its course in a significant way [19]. The most dynamic changes in human development occur during the first and second decades of life [16].

Nowadays, such phenomena as acceleration and civilizational or urban changes have an effect on the development of young men and their physical fitness. Monitoring of developmental changes in a young man seem to be justified in terms of understanding the developmental processes and implementation of preventive activities in the scope of health and physical fitness for future generations. The concept of *Health-Related Fitness* is focused on health and comprises five areas of physical fitness, including morphological, musculoskeletal, motor, and cardiopulmonary capabilities, as well as metabolic fitness. New concepts of human physical fitness tests seem to focus on utilitarian goals related to health needs and daily human activity [11] (…) *Physical fitness testing is currently based on fundamental reorientation and certainly has implications for a change in assumptions with regard to all fundamental intentions of physical education. Gradually, moving away from issues focused on motor and sport successes and in*

general on temporary exercises, the objectives of the study moved towards health indicators and full capabilities.

It is assumed that motor abilities are connected within the biological development of human beings, covering growth processes related to biological development and the impact of environmental conditions [2, 3, 4, 5]. One of two criteria in the physical and motor development of a young man is qualitative change, which concerns the development and improvement of body posture. The qualitative determinants of proper body posture, alongside a well-developed nervous system and osteoarticular system, are adequate strength, length and flexibility of postural muscles [9].

Both the prepubertal and pubertal periods are significant for the development of human physical ability [16]. Physically, in this phase of puberty a dynamic development occurs of the somatic and motor features. The puberty phase in boys usually starts between 11 and 13 years [16, 18]. During that period, intensive development affects teenage motor changes [13] (the so-called crisis of motor skills) and is commonly referred to as the second critical apogee of body posture defects. Continuous research and cross-motor development of the younger generation requires constant monitoring due to the above-mentioned preventive goals and civilizational changes (life style, organization and forms of spending free time). Knowledge concerning levels of physical fitness is a key guideline for teachers in programming movement activities (compensation for deficits, training and improvement of overall motor skills).

The objective of the study was an assessment of the level of development of selected motor skills in boys during puberty. For the purpose of the study the following research questions were formulated: 1) What are the differences in strength abilities in boys aged between 11 and 13 years living in the same urban area? 2) Are there differences in muscle endurance in boys aged between 11 and 13 years?

Material and methods

The study was conducted in 2009 in a gym belonging to Primary School No. 5 in Opole. Overall, 211 boys from this urban area were enrolled in the study, including 75 boys at the age of 11 years (4^{th} grade), 74 boys at the age of 12 years (5^{th} grade) and 62 boys at the age of 13 years (6^{th} grade). All participants systematically participated in physical education classes for three hours per week (45 minutes at a time). The Local Bioethics Committee of the Medical Chamber in Opole approved the study. The somatic features of the sample of boys are presented in Table 1.

Tab. 1 Characteristics of the sample. Values are presented as means (M) and standard deviation (DS)

Students - boys aged [years]	*n*	Height (cm)		Weight (kg)		BMI (Kg/height^2)	
		M	*SD*	*M*	*SD*	*M*	*SD*
11	75	152	6.3	49.5	6.0	16.22	1.54
12	74	157	6.3	56.8	7.7	18.05	2.04
13	62	169	6.8	59.5	6.3	17.58	1.44

In accordance with the methodology, selected trials from the European Physical Fitness Test were used to measure physical fitness [6]. During the test, assessment was made of the muscle endurance of: the abdomen and trunk (sits-up from a lying position), shoulder girdle and upper extremity muscles (overhang on a bar), as well as strength abilities, allowing the explosive strength of the upper limbs to be assessed [4, 17]. The collected data was analysed using the STATISTICA 10 (StatSoft) software. A one-way ANOVA was used to compare the selected motor skills of boys in the phase of puberty at three levels of age (11, 12 and 13 years). It was based on the assumption of normal distribution of the variables.

Results

The arithmetic mean and standard deviation for three age samples are shown in Tables 2 and 3. The differences between three age groups are presented in Figures 1, 2, 3 and 4.

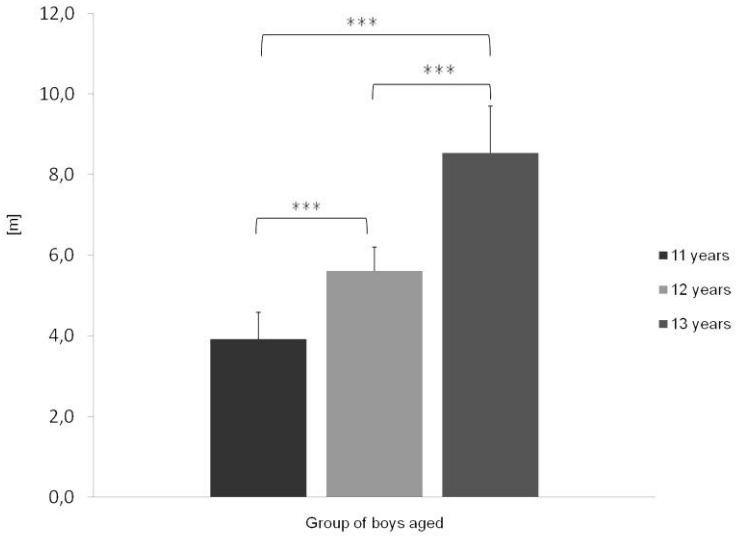
Tab. 2. Measurement results of explosive strength in upper limbs and shoulder girdle in pupils aged 11, 12 and 13 years

Students – boys aged [years]	*n*	Strength and explosive power			
		Medicine ball throw [m]			
		Throw the ball forwards		Throw the ball backwards	
		M	*SD*	*M*	*SD*
11	75	3.93	0.66	4.32	0.65
12	74	5.60	0.59	6.26	0.77
13	62	8.54	1.16	9.00	1.08

Tab. 3. Measurement results of muscle strength of shoulder girdle and abdomen in pupils aged 11, 12 and 13 years

Students – boys aged [years]	*n*	Functional strength			
		Overhang on a bar [s]		Maximum number of sitting positions from a resting position on the back in 30 seconds [number of repetitions]	
		M	*SD*	*M*	*SD*
11	75	27.00	16.14	26.11	2.80
12	74	46.43	20.61	28.30	3.10
13	62	26.34	17.99	27.15	2.90

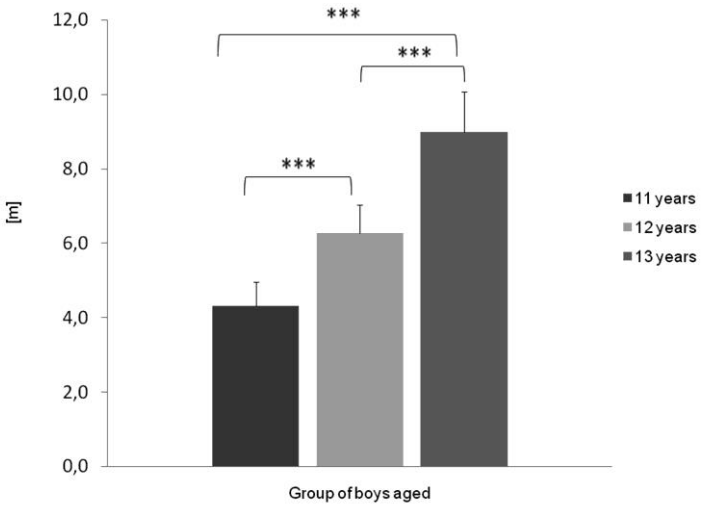
Fig. 1. Explosive strength of upper extremities and shoulders during a trial of forward medicine ball throws.



*** p<0.0001

The results of the forward medicine ball throw distances differentiate students aged 11, 12 and 13 at a high level of statistical significance (p < .000). Boys at the age of 11 achieved the shortest distances, which are shorter by approximately 1.67 [m] in comparison to boys at age 12, and 4.61 [m] shorter that those of boys at the age of 13. The difference in the average length of forward medicine ball throws between students at age of 12 and 13 was 2.94 [m] to the disadvantage of the younger pupils.

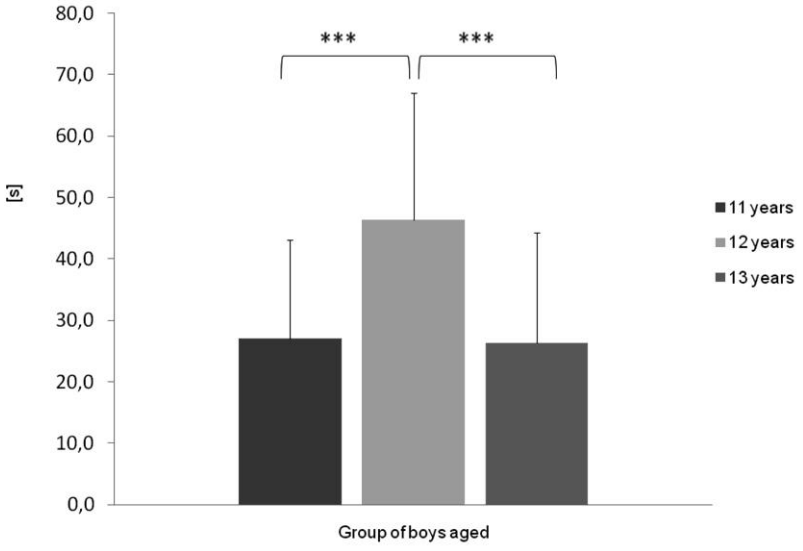
Fig. 2. Explosive strength of upper extremities and shoulders during a trial of backward medicine ball throws.



*** p<0.0001

The distance results in backward medicine ball throws as well as forward medicine ball throws are differentiated at a high level of statistical significance between the mean distances achieved by students at the age of 11, 12 and 13 years old (p < .000). In this attempt, the oldest boys again achieved the longest throw distances, which were approximately 2.74 [m] further than throws performed by boys of 12 years old, and about 4.68 [m] further than those of boys at the age of 11. Students at the age of 11 threw the ball with the shortest distances, and the difference in comparison to boys at the age of 12 was shorter by approximately 1.94 [m].

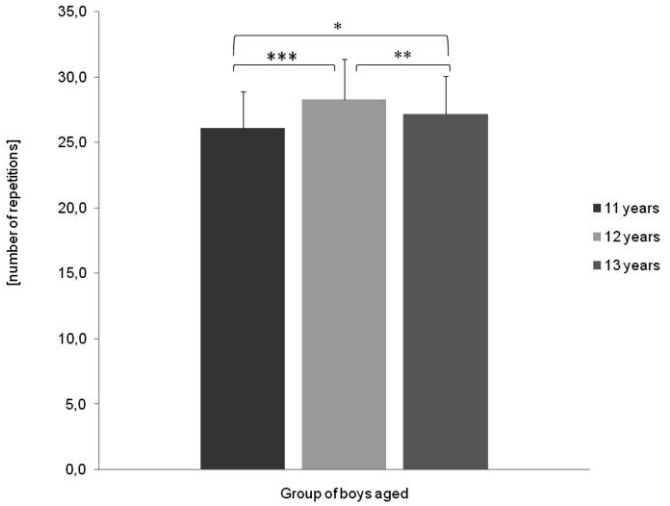
Fig. 3. Strength endurance of arm and shoulder muscles in groups of test students.



*** p<0.0001

The best results in trials on the muscle strength of the upper extremities and shoulders were attained by boys at the age of 12 and these results have a statistically high significance difference level in comparison to the results for the younger and older boys. In comparison to boys at the age of 11, the difference amounted to 19.42 [s], and in comparison to boys at the age of 13 years old the difference was 20.09 [s], Whereas the youngest boys achieved a slightly longer trial time of 0.66 [s] in comparison to the oldest boys, the difference is not statistically significant.

Fig. 4. Abdominal muscle strength measurements in three age groups of students.



*** $p<0.0001$; ** $p<0.02$; * $p<0.04$

The measures of the abdominal crunch tests (forward trunk bend from back lying position) clearly differentiate the strength of the three age groups of students. Boys aged 12 performed more bends in a limited period of time than their younger and older colleagues. Within 30 seconds, the oldest boys performed 1 bend more than their colleagues from the youngest group.

Discussion

The results of the study concerned three age groups of boys from the same urban area and from the same school community (a residential area and one of the largest schools in the city). The evaluation of selected motor skills in boys aged between 11 and 13 was related to strength skills (explosive strength) and muscle endurance (shoulder girdle and abdominal muscles). The study indicates that boys in the initial phase of puberty differ significantly in terms of their motor abilities.

The difference between the age samples of students in both trials of medicine ball throws (reflecting the explosive strength of upper extremities, shoulder girdle and trunk muscles) were significant at a very high level of P-value. Much better outcomes were obtained by the oldest pupils when compared with younger boys. Boys at the age of 13 were able to perform approximately 34% longer forward throws than their colleagues at age of 12, and as much as 54% longer throws than students at the age of 11. The difference in the length of forward throws between the youngest students and those at the age of 12 years old varied by 30%. A similar trend was observed during forward medicine ball throws overhead. During the trial, boys at the age of 12 attained approximately 30% greater distances than their colleagues at the age of 11,

which differed by 52% from the boys of 13. The difference in distance of backward throw lengths between the youngest students and those aged 12 varied by approximately 30%.

A similar trend was shown in a previous study from 2013 in a population of children aged from 10 to 12 from the town of Bochnia [8]. Also, among children of Polish emigrants living in London, boys aged 12 definitely prevail in obtaining longer distances in throwing medicine ball than the youngest ones. The present results are consistent with research by Pietraszewska [12]. She examined the development of children aged between 7 and 14 living in the countryside over a decade (1991-2000). The results suggest that after a slight slowdown, the increase in explosive strength development in boys aged between 9 and 11 is followed by its dynamic growth in boys at the age of 13 and 14. Asienkiewicz and Waddych's study indicates that there is a relationship between morphological features and selected motor abilities, combined with living environment [3].

Boys at the age of 12 achieved the longest time in the muscle strength of upper limbs and shoulders (overhang on a bar), as compared to boys at the age of 11 (established at around 42%), and to peers at the age of 13 (by approximately 43%). A curious phenomenon in the presented results is the longer overhang time achieved by the youngest participants in the tests, when compared to the oldest students (although the difference is not significant statistically). Archacka examined the impact of a complex spa treatment programme on physical fitness in children and adolescents who are overweight or obese. The group of boys at the age of 11 achieved the best outcomes in overhangs with bent arms, in comparison to boys at the age of 12 and 13 [1]. Moreover, better results were achieved by boys from the older age group than by boys at the age of 12. The present study is consistent with Pietraszewska's research and suggests that boys at that age seems to be characterized by greater regularity in the development of motor skills. The increase lasts till the age of 12. However, a slight regression in the process may appear at puberty [13]. Sunil Dutt performed research on a sample of 797 boys aged between 8 and 12. She found that better results of arm and shoulder muscle endurance were achieved by boys aged between 13 and 18, in comparison to boys aged 8 to 12 [5]. However, Górniak's study of a sample of children attending rural school revealed that boys at the age of 13 and 14 demonstrate the greatest capacity for functional strength [7]. In this case, living environment and ways of spending free time could have an effect on the differences.

The results of the abdominal muscle endurance (trunk bends lying back) test again clearly differentiate the age groups of boys. Boys at the age of 12 performed more bends in a limited period of time than their younger and older peers. Archecka found similar results [1]. However, Kazimierska and Spieszny [8] suggest that abdominal muscle strength increases with advancing age. Worth noting are the results of tests on a large population of boys at the age of 10 to 13, which covered characteristics of anthropometric features and physical abilities in Brazilian boys who had started sports training (football) [10]. The results of these studies indicate that older boys are more physically adept than younger boys in almost all trials. One exception was the test of agility: boys aged 11 attained better results than boys aged 12 and 13. Dominant strength of the upper part of the body can be observed in boys aged from 8 to 18, when compared to the strength of the abdominal muscle, hips and lower extremities [5]. Furthermore. the study performed across a population of 400 children aged 5 to 14 years (including a group of 200 boys) indicated that the strength and endurance of muscles constantly increases from 8 to 14 years, with fluctuations at the age of 11 to 13 [14].

Conclusions

The results of the study on the development of selected motor skills in boys in the phase of puberty suggests the following conclusions:

1) The progression of arm strength is significantly related to age. Boys aged 13 showed the best explosive strength of their upper limbs and shoulders in comparison to boys aged 12 and 11 years old. This can be useful information for the execution of the target and tasks of physical education (and elective courses) and pre-selection for sport.

2) Boys of 12 years old demonstrate significantly better stomach muscles and muscle capacity of the shoulder and arm girdle as compared to boys aged 11 and 13 years old. Boys aged 13 years scored significantly worse in muscle strength of shoulders and arms than boys aged 11 years. The results for boys aged 13 suggests a significant decrease in the ability of muscle strength. This indicates the importance of continuously monitoring the development of physical fitness and implementing appropriate compensatory programmes or prevention during adolescence.

BIBLIOGRAPHY

1. Archacka R. (2013). Wpływ kompleksowego programu leczenia uzdrowiskowego na sprawność fizyczną dzieci i młodzieży z nadwagą i otyłością, Rozprawa doktorska, Uniwersytet Medyczny im. Karola Marcinkowskiego w Poznaniu Wydział Nauk o Zdrowiu, Poznań.
2. Asienkiewicz R. (2005). Z badań związków cech somatycznych i sprawności motorycznej dzieci Zielonej Góry, Prace Naukowe Akademii im. Jana Długosza w Częstochowie, seria: Kultura Fizyczna, z. VI, s. 119-124.
3. Asienkiewicz R., Wandycz A. (2014). Zróżnicowanie oraz współzależność cech somatycznych i zdolności motorycznych dzieci zamieszkujących środowiska o różnym stopniu zurbanizowania. PRACE NAUKOWE, Kultura Fizyczna, Akademia im. Jana Długosza w Częstochowie, t. XIII, nr 2, s. 177–196, Częstochowa
4. Chromiński Z. (1986). Test sprawności fizycznej, Wychowanie i Higiena Szkolna, 1, 15-18.
5. Dutt S. (2005). Health Related Physical Fitness of Boys Aged 8 to 18 Years, Journal of Exercise Science and Physiotherapy, Vol. 1, No.1 & 2: 12-22, 12-22.
6. Eurofit (1993). Handbook for Eurofit Tests of Physical Fitness. Council of Europe, Strasbourg.
7. Górniak K. (2003). Właściwości rozwojowe dzieci wiejskich z bocznym skrzywieniem kręgosłupa, Annales Universitatis Mariae Curie-Skłodowska, vol. LVIIII, Suppl. XIII, 79, Sectio D, Lublin, 432-437.
8. Kaźmierska U., Spieszny M. (2013). Sprawność motoryczna 10–12-letnich dzieci z polskich rodzin mieszkających w Londynie na tle rówieśników mieszkających w Polsce, Młoda polska emigracja w UE jako przedmiot badań psychologicznych, socjologicznych i kulturowych EuroEmigranci.PL, Kraków, 1-17.
9. Kutzner-Kozińska M. (1981). Korekcja wad postawy Wydawnictwo Szkolne i Pedagogiczne, wydanie 1, Warszawa, s 16-33.
10. Luz Canhadas I., Lopes Pignataro Silva, R., Rodrigures Chaves C. Andrews Portes L. (2010). Anthropometric and physical fitness characteristics of young male soccer players, Rev Bras Cineantropom Desempenho Hum, 12(4):239-245.
11. Osiński W. (2004). Sprawność fizyczna a badania nad motorycznością człowieka: sporu o konstrukt podstawowy wcale nie ciąg dalszy, Antropomotoryka 28.
12. Pietraszewska J. (2011). Zmienność rozwojowa struktury morfologicznej jako wyznacznik możliwości funkcjonalnych dzieci i młodzieży w wieku 7–14 lat, Studia i Monografie nr 103, Akademia Wychowania Fizycznego we Wrocławiu.
13. Przywęda R. (1981). Rozwój somatyczny i motoryczny, WSiP, Warszawa.
14. Shanker Tedla J., Shenoy U.V., Jeganathan P. S., Shankar Reddy Y. R., Gopalakrishna A. (2012) Normative Data for Trunk and Lower Extremity Muscle Strength by Hand Held Dynamometer for Indian Children Aged 5-14 Years: A Cross Sectional Study, International Journal of Health Sciences & Research (www.ijhsr.org) 1 Vol.2; 2012; 1-19.
15. Stupnicki R. (2014). Relacje wagowo-wzrostowe i stosowanie wskaźnika BMI u dzieci i młodzieży. Wyższa Szkoła Kultury Fizycznej i Turystyki w Pruszkowie, e-Wydawnictwo 34 NCBKF, 2014:33-38
16. Szilágyi-Pągowska I. (2006). Charakterystyka rozwoju somatycznego w okresie dojrzewania, Borgis - Postępy Nauk Medycznych 6, s. 316-320.
17. Trzaskoma Z., Trzaskoma Ł. (1999). Kompleksowe zwiększanie siły mięśniowej sportowców, COS Warszawa.
18. Woynarowska B. (2008). Rozwój motoryczny [w] Rozwój fizyczny oraz motoryczny dzieci i młodzieży, Wydawnictwo Lekarskie PZWL, 10-28.
19. Woynarowska B., Mazur, A. (2004). Zachowania zdrowotne młodzieży szkolnej w Polsce, wyniki badań HBSC 2002. Zdrowie Publiczne, 114 (2), 159-167.

Received: November 2015
Accepted: November 2015
Published: December 2015

Correspondence

Bożena Wojciechowska-Maszkowska
Address: Politechnika Opolska. Wydział Wychowania Fizycznego i Fizjoterapii
ul. Prószkowska 76. 45-758 Opole. Poland
E-mail: b.wojciechowska-maszkowska@po.opole.pl

Journal of Physical Education & Health, 2015, vol. 4 (6), 31-36

LEADERSHIP DIMENSIONS PREFERRED AMONGST BRAZILIAN SOCCER COACHES

Vinicius Barroso Hirota[1], Danilo Andreson de Lima[2], Carlos Eduardo Lopes Verardi[3]

[1.]Department of Physical Education – Mackenzie Presbyterian University/ Department of Physical Education – Nossa Cidade College/ Researcher Member Of The Brazilian Paralympic Academy, Brazil

[2.]Department of Physical Education – Mackenzie Presbyterian University, Brazil

[3.]Department of Physical Education – UNESP - Baurú, Brazil

Abstract

The aim of the study was to assess the leadership style of soccer coaches who work in youth development clubs in the city of Barueri- SP, Brazil, implementing descriptive research based on the application of the Scale ELRE version of self-perception. 25 male soccer coaches participated in the study, aged between 24 and 57 years (average 41.32±11.65 years) and the statistical treatment of data applied the calculation of Cronbach's Alpha for reliability, mean, standard deviation and median for the dimensions of the instrument. The results related to the Alpha showed stability of the instrument with a total value of 0.87. Regarding the mean, median and standard deviation for each dimension, it has been found that the situational dimension was of 4.21±0.84 (median=4), social behavior support was 3.71±1.31 (median=4), in behavior training-instruction was 4.46 ±0.74 (median=5), for the democratic dimension the average was 3.16 ±1.12 (median=3); autocratic was 3.06 ±1.48 (average=3) and finally concerning the dimension positive reinforcement was revealed at an average of 4.28 ±0.97 (median=5). Therefore, on the basis of the data analysis we can infer that in soccer the predominant behavior of coaches consists of the adoption of positive reinforcement and training-instruction.

Key words: *Soccer; Leadership Style; Coaches.*

Introduction

Soccer is a sport that arouses interest as it lends itself to a wide array of interventive practices.However, the leadership style and technique of management can influence and determine the way athletes' play.

Management comprises a cluster of a few factors: planning, organizing, leading, and controlling [8]. Within the subarea of management and leadership in sport are lines of research related to human resource management, leadership and effectiveness of sports teams, social responsibility, sports organizations, resources, organizations, sports and competitive advantage [12].

Therefore this study is focussed upon issues of leadership and effectiveness amongst sports teams, as coaches also resemble managers, bearing in mind that all those involved in the game aim towards a single goal which requires both effort and time.

Leadership within sports groups presents a degree of complexity way due to the presence of both an external leader (coach) and an inner leader (captain). Recognition of this dual leadership can promote the success of the team, so leadership refers to the influence an individual has on his teammates around the same goal, represented in the sport by the coach/athlete relationship [13].

The leadership displayed by soccer coaches can be crucial and decisive in decision making within the context of a group of players. The longer the effective leadership of a coach over his team, the greater the cohesion and understanding of the distribution and specific roles of each team member [14].

Leadership is required and is present in all groups and types of human organization, especially in business between departments. In

sports the same process is applied, either in relation to coaches, managers or athletes in a team. On an individual basis it is important for all functions where the leader needs to understand people and know how to lead them [4].

Leaders are chosen by the group, or can emerge spontaneously in the group, and the latter are more effective because they have the respect and support of team members or the group as a whole. Usually, leaders that emerge spontaneously in the group have special skills or great leadership ability in the sport [1].

In fact it is extremely important to understand that the interactive and functional relationships established by coaches and athletes with teams, teammates, officials and spectators, offer a framework for inter-personal relationships. This has led to a psychosocial perspective in our research into the behavioural exchanges which occur between coaches and athletes within a football team [15].

Leaders have a variety of personality traits. There are specific features that make a successful leader. However, the most important characteristics can be listed as follows: integrity, flexibility, loyalty, trust, responsibility, honesty, preparation, resourcefulness, self-discipline and patience [16].

This present study uses the multidimensional model of leadership proposed by Chelladurai and Saleh [3], in which we want to analyse the soccer coach's behavior in relation to six dimensions.

Therefore a coach with democratic behavior promotes greater participation of athletes in decisions concerning the objectives of the group. Coaches who advocate social support are characterised by concern for the wellbeing of the individual players, a desire to create a positive atmosphere in the group, and the relationship with the athletes. If possible, the coach can even assist athletes with their social problems, and thus ends up being part of their personal life [5].

Coaches involved in the dimension of positive reinforcement aim to psychologically empower the athlete by encouraging them, particularly when they make mistakes [5]; thus it is possible that the coach creates opportunities for this athlete to achieve success, and possibly offers rewards.

Training from an educational dimension searches for the athlete's best and greatest performance and is therefore technically demanding and hard, so as to instruct athletes in technical and tactical competences. The autocratic coach is independent in decision making using their authority. Finally, a situational coach is one coach who takes into account momentary elements like the game, the crowd, the weather; they seek to establish individual goals and forms of reaching them, and this type of leadership seeks to identify qualities, taking into account the maturity and the technical level of athletes, so looking for ideal positioning on the pitch [5].

In this manner the present study aimed to verify which leadership style soccer coaches active in the city of Barueri – São Paulo, Brazil perceive themselves to apply, and therefore test the reproducibility of the Revised Leadership Scale for Sport (named in Brazilian Portuguese as ELRE).

METHOD

This study consisted of descriptive research, since it observed, analyzed and correlated events or phenomena (variables) without manipulating them [2]. The subjects of the study were twenty-five soccer coaches (N:25) aged from 24 to 57 years (mean age 11.65 ±41.32 years, variation coefficient of 28.19%), determined by convenience sample, operating in men's teams in the city of Barueri, São Paulo, Brazil, who have been in their current position for about 6 years and 5 months, where 30% have a graduate degree in Physical Education and the remaining are registered at the Regional Council Physical Education - CREF /SP, and have been in soccer over a period of eight years on average, having developed different roles in the soccer context.

The instrument used was the Revised Leadership Scale for Sport – ELRE proposed by Costa [5] and Costa and Samulski [6]. Its first version was developed and validated by Zhang, Jensen & Mann [17].

This scale (ELRE) contains 60 issues distributed among the 6 dimensions: Behavior Democratic or BD (12 issues), Social Behavior Support or SBS (08 issues), Positive Behavior

Reinforcement or PBR (12 issues), Behavior Training-Instruction or BTI (10 issues), AUTB or Autocratic Behavior (08 issues) and Behavior Situational Consideration or BSIT (10 issues).

The instrument aims to assess the leadership style of the technicians using a Likert scale of five points and five answer options which are accompanied by the following expressions: always (100%), often (75%), occasionally (50%) rarely (25%) and never (0%).

The coaches completed the following documents:

1) Consent for a Term of Commitment, complying with the ethics of the research;
2) An identification Questionnaire: inserting data concerning professional experience of the coach in the sport;
3) ELRE Instrument aiming to identify, from the coach's point of view, certain factors regarding their real leadership profile.

From the results obtained by applying the questionnaires, analysis of the data with the calculation of *Cronbach´s Alpha* was performed to verify the reliability of the instrument and the mean, median and standard deviation, followed by the *Mann-Whitney* test ($p \leq 0.01$ and $p \leq 0.05$) in order to highlight differences between the averages of the results of each dimension that the instrument proposed to evaluate. Internal consistencies were assessed by the following techniques: *Kuder- Richardson* and *Cronbach's Alpha* [11]. SPSS- DATA EDITOR, version 18.0 for Windows was used to perform all statistical analyses.

RESULTS AND DISCUSSION

The results related to the *Alpha´s* coefficients showed stability of the instrument with a value of 0.87; *Alpha* of 0.546 to behavior situational, social behavior support´s *Alpha* was 0.564, the *Alpha* of training-instruction was 0.750; 0.810 for the *Alpha* of democratic behavior; the autocratic behavior *Alpha* was 0.502, the *Alpha* for positive behavior reinforcement was 0.685, note Table 1. According to the results, we can say that the proposed instrument presents stability and reliability with the results revealed and thus reliability in its reproduction, hence the results of the answers are reliable.

Table 1. Results of *Alpha´s Coefficient* for each scale dimension (ELRE).

DIMENSIONS	*ALPHA´S COEFFICIENT*
Behavior Training-Instruction (BTI)	0.750
Social Behavior Support (SBS)	0.564
Behavior Situational Consideration (BSIT)	0.546
Behavior Democratic (BD)	0.810
Autocratic Behavior (AUTB)	0.502
Positive Behavior Reinforcement (PBR)	0.685
Total	**0.876**

**Alpha´s* maximun value = 1.0

The first test showed Alpha 0.86 for total ELRE more equivalent to the current study; regarding BD 0.84, PBR of 0.85, 0.65 for BSIT, SBS was 0.71, 0.41 to AUTB, and 0.83 for BTI [6].

Compared with the results of Costa, Samulski and Costa [7] the results of all soccer coaches with Alpha was 0.86 for ELRE, followed by Alpha 0.84 BD, 0.46 for AUTB, Alpha of 0.80 for dimension to SBS; 0.83 for PBR; 0.62 Alpha´s for BSIT and 0.52 for the dimension "behavior-training instruction."

Table 2: Average, standard deviation and median of each dimension of the scale.

DIMENSION	AVARAGE (ST. DEVIATION)	MEDIAN
Behavior Training-Instruction (BTI)	4.46 (±0.74)	5
Social Behavior Support (SBS)	3.71 (±1.31)	4
Behavior Situational Consideration (BSIT)	4.21 (±0.84)	4
Behavior Democratic (BD)	3.16 (±1.12)	3
Autocratic Behavior (AUTB)	3.06 (±1.48)	3
Positive Behavior Reinforcement (PBR)	4.28 (±0.97)	5

In a more recent study, evaluating twenty soccer coaches, the result of overall Alpha of the instrument was 0.86, confirming its reliability [9]. Counting the average results of each dimension, we can observe that the values presented are

the dimensions prevalence workout training-instruction (4.46), situational (4.21), and positive reinforcement (4.28), and compared with the study Hirota et al. (2011) situational dimension showed an average of 4.45, size workout instruction averaging 4.42 and positive reinforcement with an average of 4.12, so values close study. The result of training instruction was 4.64, with an average enhancement of 4.27; an average of 4.18 for situational, following the other dimensions with values below the average of three points [7].

The study involving the mode of volleyball performed, revealed that the profiles of ideological leadership behavior described by coaches facing their teams were significantly associated with high performances in social relations [10].

The behavior of the coach tends to influence the performance of athletes during matches directly. This influence does not always happen in a positive way, which means that many negative outcomes depend on the behavior of the team coach [1].

Another testing of the instrument that allows us to gauge the difference between means within each dimension, follows in Table 3.

Observing the results in comparison of the averages, we see that the relationship between the dimensions workout instruction is effectively distinguished between the results (average: 4.46) with positive reinforcement (average: 4.28), which showed no significant difference, in other words the technical soccer analyzed shows characteristics of both instruction and positive reinforcement training.

Another finding was evidenced between the democratic dimension (average: 3.16) and autocratic (average: 3.06), demonstrating that they are confounded, in other words, with no significant difference between the two.

Table 3. Results comparing the averages within each dimension of the scale.

DIMENSION (AVERAGE)	DIMENSION (AVERAGE)	MANN WHITNEY
Behavior Training-Instruction (4.46)	**SBS (3.71)**	0.000* ($p \leq 0.01$)
	BSIT (4.21)	0.000* ($p \leq 0.01$)
	BD (3.16)	0.000* ($p \leq 0.01$)
	AUTB (3.06)	0.000* ($p \leq 0.01$)
	PBR (4.28)	0.058 ($p \leq 0.05$)
Social Behavior Support (3.71)	**BSIT (4.21)**	0.001* ($p \leq 0.01$)
	BD (3.16)	0.000* ($p \leq 0.01$)
	AUTB (3.06)	0.000* ($p \leq 0.01$)
	PBR (4.28)	0.000* ($p \leq 0.01$)
Behavior Situational Consideration (4.21)	**BD (3.16)**	0.000* ($p \leq 0.01$)
	AUTB (3.06)	0.000* ($p \leq 0.01$)
	PBR (4.28)	0.050* ($p \leq 0.05$)
Behavior Democratic (3.16)	**AUTB (3.06)**	0.720 ($p \leq 0.05$)
	PBR (4.28)	0.000* ($p \leq 0.01$)
Autocratic Behavior (3.06)	**PBR (4.28)**	0.000* ($p \leq 0.01$)

*Significant differencs

The results of mean and median values shown by the instrument revealed that the coaches' characteristics are evaluated predominantly relating to dimensions of training instruction of positive reinforcement and situational, and ends when the dimensions together, positive reinforcement training and education do not differ statistically. Therefore, these are coaches who desire to strengthen the psychological aspects of athletes, offering more autonomy and seeking to encourage them to overcome difficulties. With reference to workout instructions this is associated with the quest for best technical and tactical performance, demanding better performance. In relation to positive reinforcement and situational no differences were found, so the same technicians also take into account momentary situations arising from the acyclic aspect that football presents, watching the overall context of the game.

The features of democratic and autocratic dimension also confuse in this study, where no stands on the other (p=0.720). Among other assisted comparisons in Table 03 all results were

significant. Thus, the results of the dimensions are statistically different.

CONCLUSIONS

Regarding the reproducibility of the instrument, it performed well in our sample, producing good results in terms of stability, reproducibility, and reliability. Soccer coaches display features within the dimensions of workout training-instruction, positive reinforcement and situational, which are mixed in order to get better performance from their groups.

BIBLIOGRAPHY

1. Brandão, M. R. F., Carchan, D. (2010). Preferred leadership behavior and its influence on the performance of athletes. Motricidade, 6 (1), 53-69.
2. Cervo, A. L. & Bervian, P. A. (2004). Scientific methodology. 5. ed. São Paulo: Prentice Hall.
3. Chelladurai, P., Saleh, S. (1978). Preferred Leadership in sports. Canadian Journal of applied sport Science, 3, 85-92.
4. Costa, L. A. (2005). Influence of sports in the development of leadership in business. Virtual Journal**,** 3 (10).
5. Costa, I. T. (2006). Analyze the leadership profile of football coaches in the Brazilian Championship Series A/ 2005.
6. Costa, I. T., Samuski, D. M. (2006). Leadership profile of football coaches in the Brazilian championship 2005. Brazilian Journal of Physical Education and Sports**,** 20: 175-18.
7. Costa, I. T., Samulski, D. M., Costa, V. T. (2010). Leadership profile for football coaches in the vision of the Brazilian championship coaches. Journal of Physical Education – UEM, 21 (1): 59-68.
8. Fayol, H. (2000). Classical management theory. Introduction to general management theory. Campus: Rio de Janeiro.
9. Hirota, V. B., Silva, L. F. B., De Marco, A., Verardi, C. E. L. (2011). Leadership style of football coaches. Collection Research in Physical Education, 10 (5): 91-98.
10. Lopes, M., Samulski, D., Noce, F. (2004). Analysis of the profile of the ideal coach of youth volleyball Brazilian teams. Brazilian Journal of Science and Movement, 12 (4): 51-56.
11. Pasquali, L. (1999). Psychological instruments: a practical manual drafting. Brasília, D.F.: Lab PAM.
12. Rocha, C. M., Bastos, F. C. (2011). Sport management: defining the area. Brazilian Journal of Physical Education and Sports, 25(especial): 91-103.
13. Rubio, K. (1999). The sport psychology: history and areas of expertise and research. Psychology: Science and profession, 19 (3): 60-69.
14. Samulski, D., Grecco, P. (2004). psychology applied to soccer: studies in Brazil. In: Garganta, J., Oliveira, J., Murad, M.(eds.) (2004). soccer in many colors and flavors: reflections on the world's most popular sport, Campo das Letras, Porto: 271-278.
15. Simões, A. C., Rodrigues, A. A., & Carvalho, D. F. (1998). Leadership and the forces that drive the conduct of technical and soccer athletes in group life. Paulista Journal of Physical Education, 12(2): 134-144.
16. Weinberg, S. R., Gould, D. (2001). Fundamentals of psychology of sport and exercise. Porto Alegre: Artmed Editora.
17. Zhang, J., Jensen, B. E., Mann, B. L. (1997). Modification and Revision of the Leadership Scale for Sport. Journal of Sport Behavior. New York, 20:105-122.

Received: **June** 2015
Accepted: November 2015
Published: December 2015

Correspondence

Professor Vinicius Hirota
E-mail: vhirota@mackenzie.br

Journal of Physical Education & Health, 2014, vol. 3 (5), 37-41

AN INTEGRAL ESTIMATION OF THE FUNCTIONAL STATUS OF THE EXTERNAL RESPIRATORY SYSTEMS OF QUALIFIED FUTSAL PLAYERS

V. P. Guba[1], S. L. Skorovich[2], V. V. Marinich[3], A. Stuła[4]

[1] professor, Dr.Hab., Honorary Figure of Russian Higher Education, Smolensk state university, Smolensk
[2] Ph.D., senior coach of the Russian national futsal team, Russian Futsal Club. Moscow
[3] associate professor, Ph.D. Polessky state university, Pinsk, Republic of Belarus
[4] associate professor ,Opole University of Technology, Poland

Abstract

The purpose of the study was to analyze index changes of the flow-volume curve during training of elite futsal players.

The conducted monitoring of respiration rates shows multidirectional responses of bronchial tubes of the respiratory system, vegetative nervous system, local cell and humoral factors.

The orientation of the processes to adaptation and enhancement of the oxygen transport function at submaximal loads is developed in the opposite direction among 15% of the subjects, which can result in limiting the effect of bronchismus, edema and mucus hypersecretion to the oxygen delivered to the alveolus and ultimately, decrease physical working capacity.

The dynamic monitoring of the training process when estimating the flow-volume curve indices ensures (especially in youth team players) early detection and correction of exercise-induced bronchospasm, specifying its etymology and making an early diagnosis and pharmacological intervention, that makes training and competitive processes more efficient.

Key words: *futsal, functional status, external respiratory system, elite athletes.*

Relevance

Given the modern conditions of intensification of loads in sports activity new scientific criteria should be developed to estimate the functional state of the respiratory system of qualified athletes [2, 4, 5]. An athlete's body influenced by permanent loads is characterized by specific conditions that are extremely rare for an average person. Elite futsal players usually cope well with acute and chronic fatigue, and overtraining due to excessive physical loading [1, 3].

Increased and extreme physical loading in sport limit physical activity due to the development of bronchial obstruction, cellular infiltration of the bronchial mucosa, and remodeling of the respiratory tract. Depending on the loading volume the capacity of the vascular capillary bed increases, along with blood viscosity, extended mucociliary clearance time, while increased pulmonary engorgement at maximum loading in qualified athletes results in compression of the vessels of the pulmonary circuit and development of acute respiratory distress syndrome. It serves as a basis for the respiratory tract remodeling: respiratory muscle hypertrophy occurs, subendothelial fibrosis is developed, the decrease in elasticity of the bronchial wall is marked, along with ruptures of alveoli and pulmonary capillary occlusion under mechanical and oxidative stress, increased tone of the sympathetic ANS, which leads to vasoconstriction and reduction of the vascular bed.

Recently, researchers have been more interested in nitric oxide (II) (NO) as a significant biomarker of immune inflammation. The concentration of nitrogen oxide in the exhaled air

(NOex) increases significantly especially in the case of eosinophilic airway inflammation. However, despite the extensive experience of using this marker, some aspects are still interpreted ambiguously. The relevance of measuring the athletes' NOex level is little studied [6-9].

It is therefore vital to define the clinical relevance of the NOex level in qualified athletes under strenuous loading to estimate the comparability of this marker with bronchospasm manifestations of physical loading, as well as to predict bronchial hyperresponsiveness.

The purpose of the present study was to analyze index changes of the flow-volume curve during training of elite futsal players.

Materials and methods

The study involved 26 members of the Russian national futsal team (youth and first team, 2012) aged 18-29 years. The study was performed 4 times: in the morning on an empty stomach, after a workout (in the aerobic mode), after training (during submaximal anaerobic exercise), in the early recovery period using a portable electrochemical NO-analyzer ("NObreath", Bedfont Scientific Ltd.).

To assess changes in the status of external respiratory function a spirogram was recorded using the spirograph "Spiro Spectrum" by Neurosoft. The spirogram was used to estimate the following indicators: vital capacity (VC), forced vital capacity (FVC), forced expiratory volume in 1 second (FEV1), FEV1 / FVC ratio), average air flow rate in the middle of the forced expiration between 25 and 75 % FVC (SOS 25-75), peak flow rate (PFR), instant expiratory flow rate 25 % FVC (MEF25), instant expiratory flow rate 50 % FVC (MEFR50), instant expiratory flow rate 75 % FVC (MEF75).

Results and discussion

Proceeding from the spirographic monitoring of athletes, the majority of those examined in the analysis of the flow-volume curve had an increase of velocity and volume respiratory indices, which can be described as adequate adaptive responses of the respiratory system, particularly lung ventilation, to the training load (Fig. 1).

With the increase in intensity of physical loading during exercise there was a rise in the indicators of respiratory spare abilities (FEV1, FVC, MEF50-75) and of mobilization readiness of the respiratory system to perform additional loading (Fig. 2). These changes were due to involvement of bronchial tubes and bronchioles of the distal respiratory system. The detected capacities indicate the presence of the backup resource of the respiratory system in a group of examined athletes.

High tolerance of endurance exercises in the studied group of athletes, the chance of growth in fitness and sports skills is expected.

However, some athletes (12%) noted the emergence of maladaptive changes with the increase in training loading up to submaximal level.

The findings prove the reduction of the flow-volume curve indices, characterizing speed capabilities of the respiratory system.

According to the analysis of the results, the deterioration in the external respiratory function is mainly caused by bronchial obstruction due to dysregulation of the autonomic tone with the activation of the parasympathetic division of the autonomic nervous system, reflex decrease of bronchial obstruction in response to lower levels of surfactant in the alveoli, which are observed as a consequence of hypoxic activation of lipid peroxidation processes in response to submaximal loading.

Fig. 1. Indices of external respiratory function in qualified futsal players in the dynamics of physical loading.

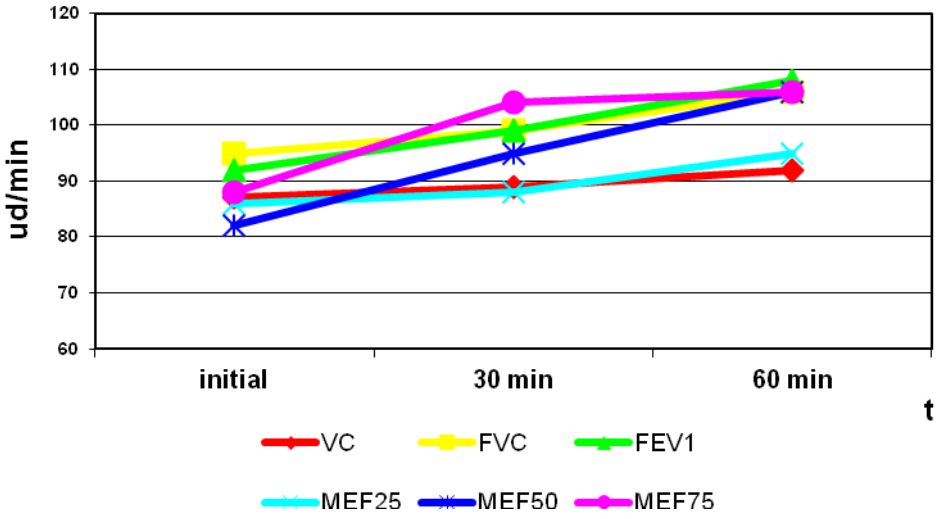
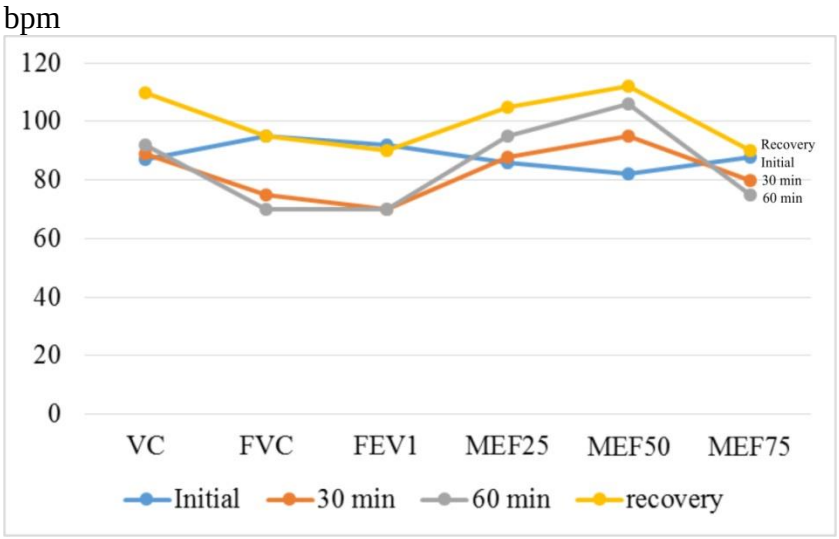


Fig. 2. Indices of external respiratory function in qualified futsal players at the build-up of intensity of physical loading

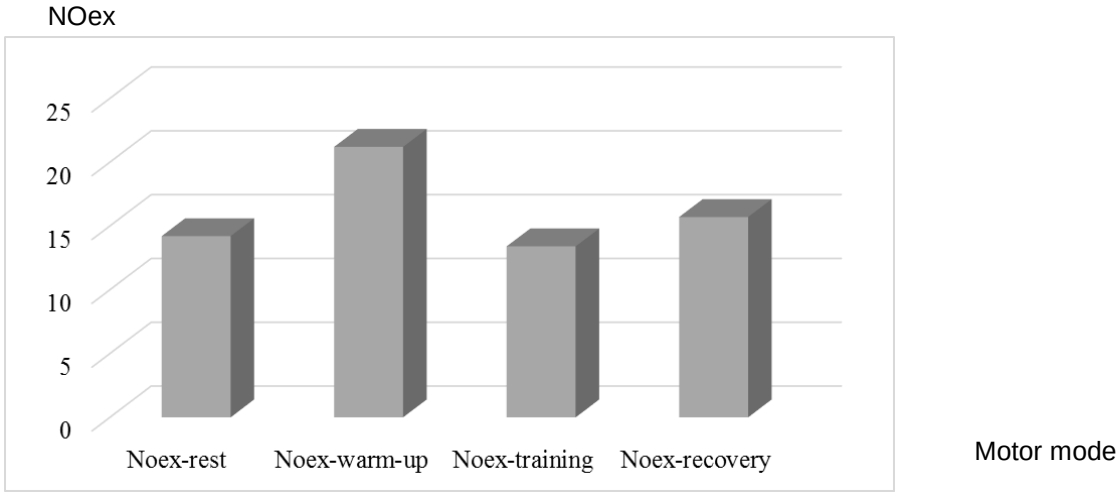


The mean level of NOex was 14,2±0,7 ppb at rest, 21,2±0,4 - after a warm-up, 13,4±0,6 - at build-up of intensity of physical loading, 15,7±0,5 - in the recovery period (Fig. 3).

A significant increase in NO production is marked at the build-up of physical loading and preserved overproduction of nitric oxide with exhaled air – during recovery.

These dynamics show the fluctuation in NOex in the area of pathological values, probably associated with a possible immune inflammation. The estimation of FER in the examined athletes has not revealed a diagnostically significant decrease in FEV1 MEF25 -75 in the dynamics of physical loading.

Fig. 3. Expiratory nitrogen oxide in qualified futsal players in the various modes of physical loading.



Note. Significance of differences at p<0,05

Conclusion

The changes detected in elite futsal players indicate the need to reduce the intensity of cyclic and speed-strength loading of submaximal power during the training process.

The conducted one-time screening of the dynamics of changes in the concentration of nitric oxide in the exhaled air with the increase in the intensity of physical loading in the youth team has detected the undulating dynamics of NO products, significantly associated with the intensity of anaerobic work. The increase of the NO values above 20 ppb for individual athletes indicates a possible risk of overproduction of this biomarker along with the subclinical process of immune inflammation in the respiratory tract. The lack of significant decrease in FEV1 in the examined athletes testifies to sufficient compensatory changes and the high respiratory potential of athletes who train for speed, strength and endurance abilities. Athletes with average and high production of nitric oxide should be regarded as a high risk group for bronchial hyperresponsiveness with constant monitoring not only of the national team, but also at club level.

In terms of preventive measures it is desirable to strengthen protein, vitamin and mineral components in the diet, use antihypoxants (succinic acid, coenzyme Q10, mildronat, cytochrome C) during specialized training and in the competition period, regulators of lipid metabolism in the pre-seaon (L-carnitine, lipoic acid), and antioxidants in the competition period (vitamins A, C, E, B5, B- carotene). In-depth phased medical supervision is recommended (once every 3 months).

The monitoring of the indicators of the external respiratory function has shown mixed reactions of bronchial tubes of the respiratory tract, autonomic nervous system, local cellular and humoral factors.

The orientation of the processes to adaptation and increase of the oxygen transport function at submaximal loading undergoes reverse development in 15 % of patients which can lead to the realization of the limiting effect of bronchospasm, edema and mucus hypersecretion in response to oxygen supply to the alveoli, and, in turn, provoke a decrease inphysical working capacity.

Dynamic monitoring of the training process in the evaluation of the flow-volume curve indices enables (especially in youth team players) to identify at an early phase and correct bronchospasm, caused by physical loading, to clarify its etiology and implement early diagnostic and pharmacological interventions to enhance the effectiveness of the training and competitive processes.

BIBLIOGRAPHY

1. Aliev, E.G. Futsal: textbook for university students in the area of “Physical culture” and the speciality “Physical culture and sport” / E.G. Aliev, S.N. Andreev, V.P. Guba. – Moscow: Sovetsky sport, 2012. – 549 P. (In Russian)
2. Guba, V.P. Integral training of football players / V.P. Guba, A.V. Leksakov, A.V. Antipov. – Moscow: Sovetsky sport, 2010. – 208 P. (In Russian)
3. Guba, V.P. The basics of sports training: methods of assessment and forecasting (morphobiomechanical approach) / V.P. Guba. – Moscow: Sovetsky sport, 2012. – 384 P. (In Russian)
4. Guba, V.P. Integral basics of sports training (methods of assessment and forecasting) / V.P. Guba // LAP LAMBEDT, Academic Publishing. – 2012. – 360 P. (In Russian)
5. Zelenin, K.N. Nitric oxide (II): new capabilities of the well known molecule / K.N. Zelenin // Sorosovskiy obrazovatel’ny zhurnal. – 1997. – № 10. – P.105-110, 852-857. (In Russian)
6. Tsyplenkova, S.E. Exhaled nitric oxide: diagnostic capabilities of pediatric pulmonology: / S.E. Tsyplenkova, Yu.L. Mizernitsky // Tikhookeanskiy meditsinskiy zhurnal. – 2006. – № 4. – P. 149-150. (In Russian)
7. Leone, A., Gustafsson, L., Francis, P., Persson, M., Wiklund, N., Moncada, S. Nitric oxide is present in exhaled breath in humans: direct GC-MS confirmation. // Biochem Biophys Res Commun 1994; 201: 883-887.
8. Alving, K., Weitzberg, E., Lundberg, J. Increased amount of nitric oxide in exhaled air of asthmatics. //Eur Respir J 1993; 6:1368-1370.
9. Barnes, P., Kharitonov, S. Exhaled nitric oxide: a new lung function test. //Thorax, 1996; 51: 233-237.

Received: November 2015
Accepted: November 2015
Published: December 2015

Correspondence

Guba Vladimir Petrovich
E-mail: fkgv@shu .ru

Journal of Physical Education & Health

Social Perspective

PHYSICAL EDUCATION TEACHER

We are planning to issue a volume including materials concerning the **education, improvement of qualifications and the work of physical education teachers in different countries**.

We would like to invite all physical education teachers/scholars to prepare articles on the above mentioned topic, analyzing/exploring/characterizing the situation in your country. This could be a case study regarding the entirety of the above mentioned topic or selected issues within this scope, such as:

1. The profession of a physical education teacher

- qualifications entitled to realize the program of physical education at respective levels of school education; qualifications for the realization of the various physical education programs at all levels of learning/education
- number of didactic classes per week;
- age of retirement;
- results of research projects, as well as the characteristic foci of publications concerning this profession;

2. Studies preparing for the above mentioned profession

- types of schools educating/training physical education teachers;
- structure of educational programmes (names of subjects, the scope of classes realizing such programmes);
- professional titles of graduates;
- results of research and the characteristics of issues concerning the education of physical education teachers;

3. Improvement of professional qualifications for physical education teachers

- normative settlements regarding this problem;
- programmess and the organizational form of courses for physical education teachers;
- the results of research and the characteristic problems concerning this issue.

4. Other issues within the scope of the above topic specific for your country.

Works should be submitted (only as an attachment to an e-mail)
to the following e-mail address: **jpe_health@onet.eu** – in the form compliant with the requirements of the magazine

(vide: **www.jpe-health.pwsz.raciborz.edu.pl**).

Following a positive review, articles shall be published in following issues.

Jerzy Pośpiech
Editor

INFORMATION FOR THE PAPER AUTHORS

Journal of Physical Education & Health

Social Perspective

is a science periodical published by the following universities: Technical University in Opole (Poland), High State School in Raciborz (Poland) and University of Balearic Islands (Spain)
which discusses the following issues:

- the health of children, adolescents and adults,
- physical activity amongst children, adolescents and adults,
- attitudes towards health amongst children, adolescents and adults,
- knowledge about health amongst children, adolescents and adults,
- initiatives and programmes designed to improve health,
- physical and health education in school curricula and public services,
- the training of teachers of different specialisms,
- developing professional skills amongst teachers and
- the training and employment of teachers.

Journal of Physical Education & Health

Social Perspective

publishes papers only in English:
▪ original papers (anonymously reviewed), ▪ demonstrative papers, ▪ editorial papers,
▪ polemics, ▪ conference and symposium information.

Original or editorial papers (including tables, bibliography, abstract)
may not be more than 30,000 characters including spaces (about 15 pages A4).

Layout of the materials submitted to be published:

1. **page**: title, names and surnames of authors, name and address of the institution represented by authors, postal address, telephone number, e-mail, agreement,
2. **page** and following pages: title, abstract (15 to 20 lines), keywords (to 5), text.

Materials submitted for publication (text – type 12 point, 1,5 of line, tables, and figures (black-white) with numeric data describing them) should be sent only as a Word document with doc. extension as an e-mail attachment.
Text should be sent by the first author from his or her e-mail box.
Layout of the original paper only: abstract, introduction, aim, materials and methods, results, discussion, conclusion, bibliography (up to 30 positions).

Footnotes in the paper referring to the bibliography should be marked with Arabic numerals and square brackets. Bibliography listing should be numbered in alphabetical order.

The submitted paper cannot be printed or submitted for publication in another journal.

A statement confirming this condition should be on the front page of the paper.
Submitting a paper for publication and attaching other data is considered a conscious agreement to printing and publishing electronically, and also on the Internet.

The editorial office reserves the right to shorten papers, correct linguistic mistakes and make any other editorial corrections.

Authors do not receive any royalties for publishing their articles, although authors receive a copy of the journal.

Editorial office address

(Editor-in-Chief: prof. Jerzy Pośpiech)
Politechnika Opolska, WWFiF, ul. Prószkowska 76, budynek nr 9 p. 23, 45-758 Opole, Poland
www.jpe-health.pwsz.raciborz.edu.pl
e-mail: jpe_health@onet.eu


POLITECHNIKA
OPOLSKA


UIB


PAŃSTWOWA WYŻSZA SZKOŁA ZAWODOWA
w RACIBORZU