

INFLUENCE OF ATTENDING EXTRACURRICULAR SPORTS ACTIVITIES ON FUNCTIONAL ABILITIES OF FIFTH AND SIXTH GRADE ELEMENTARY SCHOOL STUDENTS

UTJECAJ IZVANNASTAVNIH SPORTSKIH AKTIVNOSTI NA FUNKCIONALNE SPOSOBNOSTI
UČENIKA OSNOVNIH ŠKOLA PETOG I ŠESTOG RAZREDA

Luka Androja¹, Josip Miočić¹, Dražen Adžić² & Žarko Bilić¹

¹Aspira University College, Split, Croatia

²Elementary school Šimuna Kožičića Benje, Zadar, Croatia

ORIGINAL SCIENTIFIC ARTICLE

doi: 10.5550/sgia.201601.en.amab

UDC: 796-053.2

Received: 22.09.2020.

Approved: 26.10.2020.

Sportlogia 2020, 16 (1), 31-40.

E-ISSN 1986-6119

Correspondence:

Luka Androja, Aspira University College,

Ul. Domovinskog rata 65, Split, Croatia

+385 21 382 802

E-mail:luka.androja@aspira.hr

ABSTRACT

The sample consisted of 121 respondents from fifth and sixth-grade elementary schools from the City of Zadar. A research was conducted to determine the differences between students who, in addition to physical education and health education, also attend some other form of extracurricular sports activity. By conducting a descriptive analysis, we obtained results that show us that male students engaged in extracurricular activity achieved 21.28% better average results than respondents who do not engage in extracurricular activities. Female respondents engaged in extracurricular activities achieved 9.16% better results than respondents who did not engage in extracurricular activities (better scores in the test to assess functional ability (F6 test)). Using the t-test, we found that empirical levels of significance were statistically significant ($p = 0.000$) for all respondents in both sexes in functional abilities (F6 test). The authors can claim that students attending some forms of extracurricular sports activity have a better score in the variable F6. By performing regression analysis, authors cannot predict the result in the F6 test based on anthropometric characteristics of body height (TV) and body weight (TT). To improve the functional abilities of students, each teacher should encourage them to attend some additional forms of extracurricular sports activities in the form of improving the overall anthropological status.

Key words: *extracurricular activities, physical education, functional abilities*

INFLUENCE OF ATTENDING EXTRACURRICULAR SPORTS ACTIVITIES ON FUNCTIONAL ABILITIES OF FIFTH AND SIXTH GRADE ELEMENTARY SCHOOL STUDENTS

INTRODUCTION

In the Republic of Croatia, physical education classes in the upper grades of primary school are held twice a week for 45 minutes. The question arises, at what level are students satisfied with physical activity by chronological and biological age if two school hours meet the curriculum. Among fifth and sixth-grade elementary school students, extracurricular sports activities are a common choice. Among the wide range of activities offered to students, sports activities according to research take first place. The sport will have two effects on a child; the first is the impact on health and a healthy lifestyle, and the second, perhaps more important, is the one that affects the psyche of children (Stevanović, 2003). Determining the current state of the student as an individual, as well as of the group as a whole, enables the teacher to directly control his work and to program and implement the planned contents in a quality manner in order to achieve the set goals (Androja, T. Bavčević & D. Bavčević, 2019).

For many years, sports scientists have been trying to find ways to evaluate functional ability in several selected populations. The importance of an adequate level of functional

abilities arises primarily from health reasons, as a kind of protective measure against a predominantly sedentary lifestyle and its consequences: the emergence of increasing obesity and diabetes (Hills, King, & Armstrong, 2007). The optimal level of functional abilities can be achieved by programmed fitness training, and that part of it is aimed at raising the efficiency of the transport (cardiovascular and cardio-respiratory) system and increasing anaerobic capacity. The structure of functional ability training consists of stimuli of aerobic and anaerobic character, which thus cover the area of activation of different energy systems (Milanović, 2013).

Research has found that more regular extracurricular sports activities are carried out more often in environments that support it and appreciate it both in material and professional terms. Experts have determined that for optimal growth and development and the health of each person, it is necessary to provide appropriate material conditions, professional staff, and to monitor and evaluate the appropriate characteristics and abilities (Findak, Metikoš, Mraković, & Neljak, 1996).

INFLUENCE OF ATTENDING EXTRACURRICULAR SPORTS ACTIVITIES ON FUNCTIONAL ABILITIES OF FIFTH AND SIXTH GRADE ELEMENTARY SCHOOL STUDENTS

Given the unavailability and complicated application of these measures in the teaching of physical education and health, the most appropriate assessment of functional abilities of students (general aerobic ability) is performed by running 3 minutes (F3) for primary school students, and 6 minutes (F6) for upper primary school students and high school students (Findak, 1999). Sertić, Vračan, & Baić, (2005) conducted a study comparing twelve-year-old judo fighters and non-sports males and obtained significant differences in the F6 test. Lorger, Bujan, & Ovčarić, (2008) tried to determine the anthropological model of a successful handball player in school sports

and obtained F6 test values higher than the grade excellent compared to orientation norms (Findak, 1999).

The problem with this paper is to examine whether students who attend extracurricular activities run more meters than those who do not attend a 6-minute running test. The main goal of this research is to determine whether there are quantitative differences between fifth and sixth-grade students of elementary school from Zadar, in the functional ability test, who attend some forms of extracurricular sports activities and those students who do not attend any forms of extracurricular sports activities.

METHODS

The sample in this study consisted of 121 fifth and sixth-grade elementary school students from Zadar, aged 11 and 12 years - 61 respondents are male, while 60 respondents are female. The sample was also divided into respondents who attend in additional activities outside the subject of physical education and those who do not. 33 male students are engaged (with an average body weight of 42.06 kg and an average body height of 150.02 cm),

while 28 are not engaged (with an average body weight of 44.25 kg and an average body height of 149.73 cm). Regarding female students, 31 of them are engaged (with an average body weight of 41.08 kg and an average body height of 151.08 cm), while 29 of them are not engaged in any extracurricular activities (with an average body weight of 43.44 kg and with an average body height of 150.64cm).

INFLUENCE OF ATTENDING EXTRACURRICULAR SPORTS ACTIVITIES ON FUNCTIONAL ABILITIES OF FIFTH AND SIXTH GRADE ELEMENTARY SCHOOL STUDENTS

Table 1. *Sample size*

gender	activity	frequency	MTT	MTV
male	yes	33	42,06	150,02
	no	28	44,25	149,73
	in total	61		
female	yes	31	41,08	151,08
	no	29	43,44	150,64
	in total	60		

For the purpose of the research we were use a variable for assessing the functional abilities of students (general aerobic abilities) - running 6 minutes test - (F6). Test was conducted on sports playground near schools

due the lessons of physical education, in morning hours.

The entry and processing of complete data were done with the help of the computer program Statistica ver. 12.0.

RESULTS

Table 1. *F6 test results in all subjects*

gender	activity	frequency	Min F6	Max F6	Mean F6	SD	K-S test
male	da	33	840,00	1368,00	1208,73	110,66	0,078
	ne	28	600,00	1260,00	996,64	145,06	0,417
female	da	31	970,00	1248,00	1076,33	77,65	0,127
	ne	29	720,00	1128,00	986,00	93,59	0,478

Table 1. shows the results of all subjects on the F6 aptitude test. Based on the average value of the results of the F6 test, it can be noticed that the respondents of both genders who are engaged in extracurricular activities achieved better results than those who are not.

INFLUENCE OF ATTENDING EXTRACURRICULAR SPORTS ACTIVITIES ON FUNCTIONAL ABILITIES OF FIFTH AND SIXTH GRADE ELEMENTARY SCHOOL STUDENTS

Thus, male respondents who attend extracurricular activities achieved 21.28% better average results than respondents who do not engage in extracurricular activities. Female

respondents engaged in extracurricular activities achieved 9.16% better results than respondents who did not engage in extracurricular activities.

Graph 1. Presentation of F6 test results in subjects of both genders who are engaged in additional activities and those who are not engaged, and the differences between the achieved results

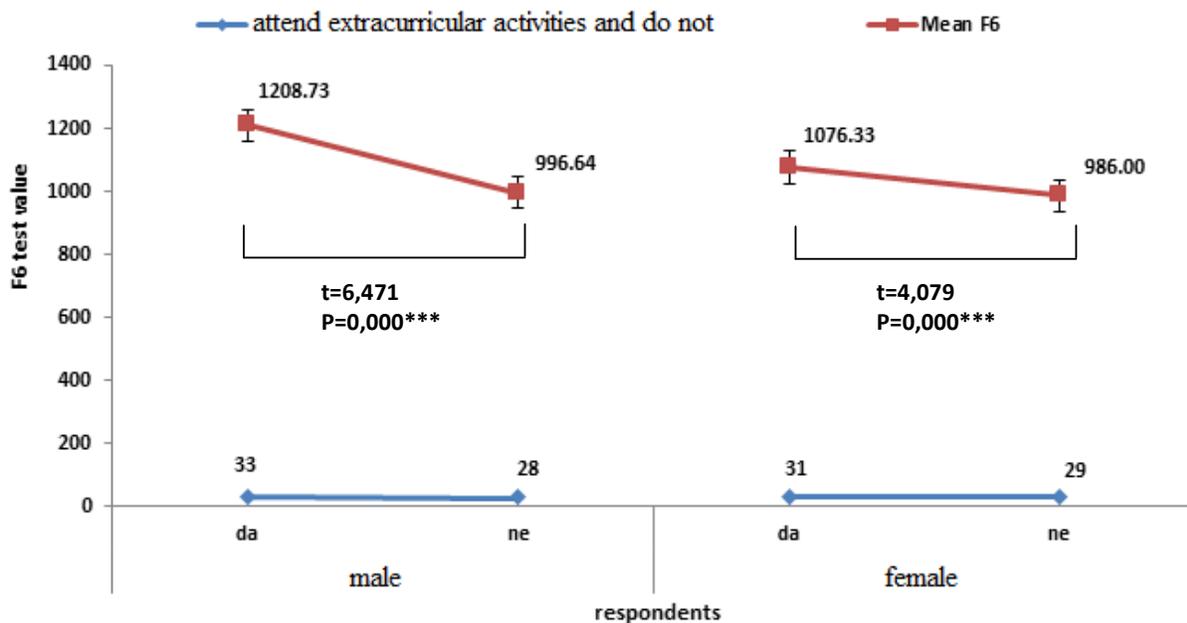


Table 2. Differences between F6 test results in male and female subjects who engage in extracurricular activities and who do not engage in extracurricular activities

Variable	N (no)	N (yes)	Mean (no)	Mean (yes)	t- value	df	p
F6 male	28	33	996,64	1208,73	6,471	59	0,000
F6 female	29	31	986,00	1076,33	4,079	58	0,000

Based on the values of the T-test results for the independent samples shown in the table, it can be concluded that there is a statistically significant difference in both genders, at 0.005 between the results achieved on the aptitude test between subjects engaged in extracurricular activities and those not engage in extracurricular activities.

INFLUENCE OF ATTENDING EXTRACURRICULAR SPORTS ACTIVITIES ON FUNCTIONAL ABILITIES OF FIFTH AND SIXTH GRADE ELEMENTARY SCHOOL STUDENTS

Table 3. Differences between the results of male and female respondents engaged in extracurricular activities in the F6 test

Variable	N male	N female	Mean male	Mean female	t- value	df	p
F6	33	31	1208,73	1076,33	5,507	62	0,000

Based on the values of the T-test results for the independent samples shown in the table, it can be concluded that there is a statistically significant difference at the level of 0.005 between the results achieved on the aptitude

test between male and female subjects engaged in extracurricular activities.

It can be concluded that male respondents achieved better results by 12.30%.

Table 4. Regression analysis (prediction of F6 test results based on individual anthropometry variables - body height and body weight)

Respondents	Independent variables	Non-standardized coefficient		Standardized coefficient	T	Sig.	Dependent variable
		B	Standard error	Beta			
Male	constant	1778,296	503,619		3,531	0,001	F6
	TV	-3,173	4,050	-0,254	-0,783	0,440	
	TT	-2,226	2,955	-0,244	-0,753	0,457	
Female	constant	967,783	522,443		1,852	0,075	F6
	TV	1,391	3,950	0,092	0,352	0,727	
	TT	-2,474	2,797	-0,232	-0,885	0,384	

Examining the prediction of test results to assess functional abilities (F6), based on anthropometric characteristics of body height (TV) and body weight (TT) in both genders, it was observed that in subjects of both genders

anthropometric characteristics of body height (TV) and body weight), do not statistically significantly affect the results of the test for the assessment of functional abilities (F6). Based on these results, it can be assumed that the

INFLUENCE OF ATTENDING EXTRACURRICULAR SPORTS ACTIVITIES ON FUNCTIONAL ABILITIES OF FIFTH AND SIXTH GRADE ELEMENTARY SCHOOL STUDENTS

results of the F6 test cannot be predicted based on the anthropometric characteristics of body

height (TV) and body weight (TT) in both genders.

DISCUSSION

The authors obtained data that male students attending extracurricular activities are better in the F6 test by as much as 21.28%, while girls are better by 9.16%. The reason for the previously written data will be explained through the following discussion. The T-test for independent samples was used to establish the differences between those students who attend physical education and health education and some additional form of extracurricular sports activities and those who do not. With the help of an empirical level of significance that is statistically significant, according to the assessment segment between the criterion variable F6 test of male students and female students, we can claim that students who attended some forms of extracurricular sports activity have a better result in variable F6 (F6 male = 0,000, F6 female = 0.000). Also, the difference between male and female students is statistically significant (0,000). The T-test showed us that there is a statistically significant difference between both sexes in the F6 test in those who engage and those who do not engage in extracurricular activities. The

result is an indication that extracurricular activities can significantly contribute to the development of functional abilities. It is not just about a better result, better functional abilities correlate with many other positive factors for the health and functionality of the entire human organism. Male students had a 12.30% better score in the F6 test than female students. Girls enter puberty earlier, but it can also have negative connotations.

The anthropometric composition of the body is similar in girls and boys in early childhood. Later, girls begin to gain more fat, and boys, starting in adolescence, begin to grow lean mass much more than girls. Also, on average, boys are more involved in sports than girls, and especially sports such as football, basketball, handball where racing shares are pronounced. While girls are more involved in sports such as volleyball, dance, wherein training they have a greater emphasis on the technical part and the beauty of the performance, and less on functional abilities. By performing regression analysis, as

INFLUENCE OF ATTENDING EXTRACURRICULAR SPORTS ACTIVITIES ON FUNCTIONAL ABILITIES OF FIFTH AND SIXTH GRADE ELEMENTARY SCHOOL STUDENTS

previously stated, we cannot predict the result in the F6 test based on anthropometric characteristics of body height (TV) and body weight (TT). At the ages of 11 and 12, girls begin to enter puberty, but rapid growth and development do not necessarily mean a better correlation with better results in sports

CONCLUSION

The obtained results show that there are significant differences between fifth and sixth-grade students of primary schools from Zadar who actively practice extracurricular sports activities, ie sports training and those who do not. The research confirmed that additional sports activity in addition to teaching physical education and health culture has a positive effect on the functional abilities of students.

The number of hours and the duration of a lesson in physical education and health education in primary school is not sufficient for the development of functional ability. In order to improve the functional abilities of students, each teacher should encourage them to attend some additional forms of extracurricular sports activities in the form of improving the overall anthropological status and help growth and development. Also, the Ministry of Science and Education should

activities. The exact opposite can happen! Each child is a separate individual, and the authors generally claim that at this age one cannot conclude that someone will be better in the F6 test due to more pronounced anthropometric characteristics.

consider introducing an additional physical education class in the school week. If this is not possible, students should be educated more about the importance of playing sports on health status. Lower functional abilities have consequences and higher risks of various diseases. Therefore, there is no activity such as sports training to prevent potential problems. Accordingly, the results can be of great use to coaches and teachers of physical education for better planning and programming the training cycles and the teaching process, guidance, control of individual level of training, monitoring of growth and development, development of basic and specific motor skills, control of the realization of teaching and in general the entire teaching of physical education (Androja, T. Bavčević & D. Bavčević, 2019).

INFLUENCE OF ATTENDING EXTRACURRICULAR SPORTS ACTIVITIES ON FUNCTIONAL ABILITIES OF FIFTH AND SIXTH GRADE ELEMENTARY SCHOOL STUDENTS

ACKNOWLEDGMENT

The authors thank University College Aspira, Split, Croatia for giving them funding for the publication of this paper in SportLogia.

REFERENCES

1. Androja, L., Bavčević, T.; Bavčević, D. (2019). Correlation between morphological characteristics and motor skills in primary-school students from seventh and eight form // *Book of Proceedings, XXII Scientific Conference "FIS Communications 2019" in physical education, sport and recreation /* Stojiljković, Nenad (ur.). Niš: Faculty of sport and physical education, University of Niš, 2019. str. 154- 15
2. Findak, V. (1999.): *Metodika tjelesne i zdravstvene kulture*. Zagreb, Školska knjiga.
3. Findak, V., Metikoš, D. Mraković, M. i Neljak, B. (1996.) *Primijenjena kineziologija u školstvu – Norme*. Zagreb: Hrvatski pedagoško-književni zbor. Zagreb: Fakultet za fizičku klulturu Sveučilišta u Zagrebu.
4. Hills, A.P., King, N.A., Armstrong, T.P. The Contribution of Physicl Activity and Sedentary Behaviours to the Growth and Development of Children and Adolescents. *Sports Med*, 37(6): 533 – 545, 2007.
<https://doi.org/10.2165/00007256-200737060-00006>
PMid:17503878
5. Lorgjer, M., Bujan, M., Ovčarić, L. (2008.): *Motoričko – antropometrijski model mlade uspješne rukometašice u školskom sportu*, U: Findak, V. (ur.): 17. ljetna škola kineziologa Hrvatske, Rovinj, str. 528 – 534, Kineziološki fakultet Sveučilište u Zagrebu
6. Milanović, D. (2013). *Teorija treninga*. Zagreb: Kineziološki fakultet sveučilišta u Zagreb
7. Sertić, H., Vračan, D., Baić, M. (2005.): *Razlike u nekim antropološkim obilježjima dvanaestogodišnjih dječaka džudaša i dječaka nesportaša*, U: Findak, V. (ur.): 14. ljetna škola kineziologa Hrvatske, Rovinj, str. 119 – 125, Kineziološki fakultet Sveučilište u Zagrebu.
8. Stevanović, M. (2003.) *Predškolska pedagogija*. Rijeka:Andromeda

INFLUENCE OF ATTENDING EXTRACURRICULAR SPORTS ACTIVITIES ON FUNCTIONAL ABILITIES OF FIFTH AND SIXTH GRADE ELEMENTARY SCHOOL STUDENTS

SAŽETAK

Uzorak je činio 121 ispitanik iz petih i šestih razreda osnovnih škola grada Zadra. Provedeno je istraživanje kako bi se utvrdile razlike između učenika koji, osim tjelesnog i zdravstvenog odgoja pohađaju i neki drugi oblik izvannastavne sportske aktivnosti. Provođenjem deskriptivne analize dobili smo rezultate koji nam pokazuju da su muški učenici koji se bave izvannastavnom aktivnošću postigli 21,28% bolje prosječne rezultate od ispitanika koji se ne bave izvannastavnim aktivnostima. Ispitanice uključene u izvannastavne aktivnosti su postigle 9,16% bolje rezultate od ispitanica koje se nisu bavile izvannastavnim aktivnostima (bolji rezultati u testu za procjenu funkcionalne sposobnosti (F6 test)). Korištenjem t-testa otkrili smo da su empirijske razine značajnosti statistički značajne ($p = 0,000$) za sve ispitanike kod oba spola u funkcionalnim sposobnostima (F6 test). Autori mogu tvrditi da učenici koji pohađaju neke oblike izvannastavnih sportskih aktivnosti imaju bolji rezultat u varijabi F6. Izvođenjem regresijske analize autori ne mogu predvidjeti rezultat u F6 testu na temelju antropometrijskih karakteristika tjelesne visine (TV) i tjelesne težine (TT). Broj nastavnih sati i trajanje sata tjelesnog odgoja u osnovnoj školi nije dovoljan za razvoj funkcionalne sposobnosti. Da bi poboljšali funkcionalne sposobnosti učenika, svaki bi ih učitelj trebao potaknuti da pohađaju neke dodatne oblike izvannastavnih sportskih aktivnosti u vidu poboljšanja cjelokupnog antropološkog statusa. Niže funkcionalne sposobnosti imaju posljedice i veći rizik od raznih bolesti. Stoga ne postoji aktivnost poput sportskog treninga kako bi se spriječili potencijalni problemi.

Ključne riječi: izvannastavne aktivnosti, tjelesna i zdravstvena kultura, funkcionalne sposobnosti

Received: 22.09.2020.

Approved: 26.10.2020.

Correspondence:

Luka Androja

Aspira University College

Ul. Domovinskog rata 65

Split, Croatia

+385 21 382 802

E-mail:luka.androja@aspira.hr

<https://orcid.org/0000-0002-0546-6972>