

GENDER DIFFERENCES IN SOME MOTOR SKILLS IN ADOLESCENTS FROM THE REPUBLIC OF KOSOVO

DOI: <https://doi.org/10.46733/PESH24131099r>

(Original scientific paper)

Naser Rashiti¹, Liridon Bekolli¹, Labinot Ramadani¹, Gazmend Heta², Behar Maliqi¹

¹University of Prishtina, Faculty of Physical Education and Sports, Kosova, Prishtina,
State University of Tetova,

²Faculty of Physical Education, Tetova, North Macedonia

Abstract

The main purpose of this research is to determine the condition and differences in motor abilities between boys and girls aged 14-15 years from the Republic of Kosovo. The research was carried out on a sample of 200 adolescents, from: SHFMU "Abaz Ajeti" in Gjilan, SHFMU "Rasim Kiqina" in Drenas, SHFMU "Abaz Ajeti" in Prishtina, SHFMU "Abaz Ajeti" in Viti, SHFMU "Abaz Ajeti" in Kamenic, namely students aged 15 ± 06 years old. primary schools in the Republic of Kosovo. The sample is divided into two subsamples according to gender, namely 120 respondents are boys and 80 respondents are girls. The average age of the respondents of both genders was 14-15 years. In order to achieve the objectives of the research, these eight motor tests were used: 10-meter run from a high start (TR10M), 20-meter run from a high start (TR20M), standing long jump (SDM), left standing jump leg (SMLN), right-footed jump (SMDN), hand tapping (TR), foot tapping (TN), deep bench press (DPK). The results were statistically processed with SPSS, v. 26.0 for WINDOWS (basic statistics, Student's t-test). Results generally indicate that Boys perform better in motor tests assessing speed (running 10 and 20 meters from a high start), explosive power of the lower extremities (standing long jump, left foot standing jump) and frequency speed on the upper and lower extremities (arm and leg tanning). Statistically significant differences between boys and girls were not found in the right leg standing jump test and flexibility in the hip joint and the lower spine (deep bench press). According to the results obtained for the different level of motor abilities between boys and girls in adolescence, the need for a differentiated approach in physical education instruction is imposed in terms of adapting physical activities in relation to full membership, the level of motor abilities as well as their needs and interests.

Keywords: adolescents, anthropometric characteristics, students.

Introduction

The knowledge of motor abilities of the physical education teacher facilitates the process of teaching planning, the choice of methods and organizational forms of work and, most importantly, the choice of physical exercises on the basis of which the goals and tasks of physical education are realized. In setting the problem of this paper, we started from the fact that the physical activity among boys and girls in adolescence is determined by the full affiliation, both by the volume of the physical activity and by the structure of the movements.

Among the factors that affect the success of results in motor abilities, endogenous (genetic, hormonal) and exogenous factors (nutrition, physical activity, socioeconomic, psychological, climatic, etc.) are included. Until puberty, male and female students develop biologically simultaneously, which leads to the assumption that there should not be a significant difference between male and female motor skills. Gender differences in most parameters of growth and development begin to appear during puberty, and physical activity is cited as one of the exogenous factors affecting growth and maturation.

Therefore, it is assumed that between male and female students in adolescence there are certain differences in motor abilities that should be taken into account when planning, organizing and implementing sports activities in the teaching process of physical education and in training.

Therefore, this research was undertaken to determine the condition and differences in motor skills between boys and girls aged 14-15 years from the Republic of Kosovo.

Materials & Methods

Sample of respondents

The research was conducted on a sample of 200 teenagers from : SHFMU "Abaz Ajeti" in Gjilan, SHFMU "Rasim Kiqina" in Drenas, SHFMU "Abaz Ajeti" in Prishtina, SHFMU "Abaz Ajeti" in Viti, SHFMU "Abaz Ajeti" in Kamenic, namely students aged 15 ± 06 years old. primary schools in the Republic of Kosovo. The sample is divided into two subsamples according to gender, namely 120 respondents are boys and 80 respondents are girls. The average age of the respondents of both sexes was 14-15 years.

The study included all students whose parents gave consent to participate in the research, who were psychophysically healthy and who regularly attended physical and health education classes. The cases were treated in accordance with the Declaration of Helsinki.

The measurements were carried out in September and October 2022/2023, in standard school conditions during regular physical and health education classes.

Measurement of motor tests

The students' motor skills were assessed with the following manifest motor tests : 10-meter high start run (TR10M), 20-meter high start run (TR20M), standing long jump (SDM), standing jump with the left leg (SMLN), right foot jump (SMDN), hand tapping (TR), foot tapping (TN), deep bench press (DPK).

The measurement was carried out in standard school conditions during regular physical and health education classes. The measurement is carried out by experts in the field of kinesiology, who were previously trained to measure a specific motor test. The rooms in which the measurements were performed were clean, sufficiently warm and adequately lit. During the measurement, the subjects were dressed in sports equipment.

Statistical analysis

Mean), standard deviation (SD) were calculated for each motor test in boys and girls . The significance of the differences of arithmetic means between boys and girls in each motor test was tested with Student's t-test, and the level of significance was fixed at $p=0.05$.

All the analyses were performed using the Statistical Package for Social Sciences software (SPSS, v. 16.0 for WINDOWS; SPSS Inc., Chicago, IL, USA), and values of $p<0.05$ were considered statistically significant

Results

The distribution of results in most variables among male and female students is normal, which made it possible to carry out further processing of the basic data in a methodologically correct manner.

Table 1 shows the significance of the differences (t-tests) of the arithmetic means of the anthropomotor tests between boys and girls. From the review of table 1, it can be seen that between boys and girls there are statistically significant differences in 6 out of a total of 8 variables. Intergroup differences were determined in motor tests: 10m high start run, 20m high start run, standing long jump, left leg standing jump, hand tapping and leg tapping. Statistically significant differences between boys and girls were not determined in the motor tests : standing jump with the right leg and the flexibility assessment test (forward bending).

Table 1. Differences in motor tests between boys and girls

	Boys		Girls		t	df	Sig.
	Mean	SD	Mean	SD			
Running 10	2,30	0,26	2,73	0,35	-11,89	236,54	0,000
Running 20	3,83	0,40	4,52	0,54	-12,13	233,61	0,000
Standing jump	1,66	0,28	1,19	0,25	14,78	281,38	0,000
Left leg jump	2,38	8,47	1,04	0,20	1,96	152,20	0,050
Right leg jump	2,48	9,47	1,04	0,20	1,88	152,16	0,062
Hand tapping	40,95	6,85	38,16	9,22	2,85	236,65	0,005
Leg tapping	28,52	6,34	19,92	5,52	12,21	281,93	0,000
Flexibility in the front	23,61	7,25	22,12	6,68	1,81	280,43	0,072

From the value of the arithmetic means and the level of statistical significance, it can be seen that boys achieve better results in tests for assessing speed (running 10 and 20 meters from a high start), the explosive power of the lower limbs (long jump, jump from a place with the left leg) and the rate of frequency of the upper and lower extremities (tanning with the arm and leg).

Discussion

14-15 year-old boys perform better in motor tests assessing speed (10 and 20 meter sprint from a high start), lower extremity explosive power (standing long jump, left foot standing jump) and speed on the frequency of the upper and lower extremities (arm and leg tanning). Statistically significant differences were not determined in the right leg jump test and flexibility in the hip joint and the lower spine (deep bench press).

Gender differences in the period of adolescence in combination with the effects of endocrine adaptation (influence of gonadal steroid hormones and the growth hormone) typical of sexual maturation, morphological differences, above all in body composition (in boys, the mineral content in bones and muscle mass increases more, and the deposition of fat around the coccyx decreases), functional differences and physical activity are the main factors for differences in motor skills during this period between boys and girls. In this period, the morphological and functional characteristics gradually stabilize, and while boys in this period are generally involved more in an organized form of training and spontaneous physical activities, girls contribute to the improvement, among other things, of strength which in turn contributes to the improvement of other motor tasks. During this period, there are obvious differences in body composition (boys have a higher percentage of muscle mass, while girls have fat tissue), as well as differences in hemoglobin concentration. Body mass (especially passive mass) is not an obstacle in boys, which is not the case in the female population. The effects of endocrine adaptation typical of sexual maturation increase testosterone and growth hormone (GH) levels. Testosterone levels (Amstrong, 2007) increase fourfold during the early stages of puberty, up to 20-fold during mid and late puberty in boys. Testosterone stimulates anabolic processes (protein synthesis) in skeletal muscles and is most likely responsible for the pronounced differences in strength and speed in this age group. The greater percentage of muscle mass, hemoglobin concentration, greater physical activity in the adolescent phase are most likely the main factors that lead to the differences in the motor tests .

In all age categories, no significant statistical differences were determined in the motor test for assessing general balance (flamingo) and speed of alternative movements (hand tapping).

Similar results have been obtained in several previous studies (Kurelić, N., et. al. 1975). Strel (Strel, J., et. al, 2003), Konadrq and Šajber (Kondri c M . & Šajber D., 1997) state that during adolescence there are differences in motor skills, and the differences are mostly pronounced in the year 13 of life. Marković and colleagues (Mraković, M., et al. 1996) state that the weaker motility in girls cannot be attributed only to morphological specificities, but also to a lower level of physical activity, and especially less engagement in sports and recreational activities. Mišigoj-Durakovi c (Mišigoj-Duraković, M. 2008) states that with increasing age motor skills improve and that girls' motor skills reach their plateau at the age of 14 or 15.

According to the results obtained for the different level of motor abilities between boys and girls in adolescence, the need for a differentiated approach in physical education instruction is imposed in terms of adapting physical activities in relation to full membership, the level of motor abilities as well as their needs and interests.

Conclusion

Based on the conducted research, the following conclusion can be drawn from the obtained results: Boys at the age of 14-15 achieve better results in the motor tests for assessing speed (running 10 and 20 meters from a high start), the explosive force of the lower limbs (standing long jump, standing jump with left leg) and frequency speed of the upper and lower extremities (tanning with arm and leg). Statistically significant differences between boys and girls were not found in the right leg standing jump test and flexibility in the hip joint and lower spine (deep bench press).

References

Badrić, M. (2011). *Povezanost kinezioloških aktivnosti u slobodnom vremenu i motoričkih sposobnosti učenika srednje školske dobi* (Doctoral dissertation, Kineziološki fakultet u Zagrebu).

- Boye, K. R., Dimitriou, T., Manz, F., Schoenau, E., Neu, C., Wudy, S., & Remer, T. (2002). Anthropometric assessment of muscularity during growth: estimating fat-free mass with 2 skinfold-thickness measurements is superior to measuring midupper arm muscle area in healthy prepubertal children. *The American journal of clinical nutrition*, 76(3), 628-632.
- Findak, V., Metikoš, D., Mraković, M., & Neljak, B. (1996). Primjenjena kineziologija u školstvu–Norme. *Hrvatski pedagoški-književni zbor. Zagreb. Fakultet za fizičku kulturu Sveučilišta u Zagrebu*.
- Kondrič, M., Šajber, D., Štihec, J., & Strel, J. (1997). *Analiza razvoja nekaterih telesnih značilnosti in gibalnih sposobnosti učencev in učenk v Republiki Sloveniji od leta 1988 do 1995: magistrska naloga*. M. Kondrič.
- Kurelić, N., Momirović, K., Stojanović, M., Šturm, J., Radojević, Đ., & Viskić-Štalec, N. (1975). *Struktura i razvoj morfoloških i motoričkih dimenzija omladine*. Institut za naučna istraživanja Fakulteta za fizičko vaspitanje Univerziteta.
- Mak, K. K., Ho, S. Y., Lo, W. S., Thomas, G. N., McManus, A. M., Day, J. R., & Lam, T. H. (2010). Health-related physical fitness and weight status in Hong Kong adolescents. *BMC public health*, 10, 1-5.
- Malina, R. M., & Katzmarzyk, P. T. (1999). Validity of the body mass index as an indicator of the risk and presence of overweight in adolescents. *The American journal of clinical nutrition*, 70(1), 131S-136S.
- Martinez-Gomez, D., Ruiz, J. R., Ortega, F. B., Veiga, O. L., Moliner-Urdiales, D., Mauro, B., ... & HELENA Study Group. (2010). Recommended levels of physical activity to avoid an excess of body fat in European adolescents: the HELENA Study. *American journal of preventive medicine*, 39(3), 203-211.
- Metikoš, D., Hofman, E., Prot, F., Pintar, Ž., & Oreb, G. (1989). Mjerenje bazičnih motoričkih dimenzija sportaša. Mišigoj-Duraković, M. (2008). Kinantropologija: biološki aspekti tjelesnog vježbanja.
- Mraković, M., Findak, V., Metikoš, D., & Neljak, B. (1996). Developmental characteristics of motor and functional abilities in primary and secondary school pupils. *Kinesiology*, 28(2), 57-65.
- Örjan, E., Kristjan, O., & Björn, E. (2005). Physical performance and body mass index in Swedish children and adolescents. *Scandinavian Journal of Nutrition*, 49(4), 172-179.
- Ortega, F. B., Artero, E. G., Ruiz, J. R., España-Romero, V., Jiménez-Pavón, D., Vicente-Rodríguez, G., ... & Castillo, M. J. (2011). Physical fitness levels among European adolescents: the HELENA study. *British journal of sports medicine*, 45(1), 20-29.
- Prskalo, I., Samac, M., & Kvesić, M. (2009). Morfološke i motoričke značajke kao spolni dimorfizam djece od 1. do 3. razreda. In *18. ljetna škola kineziologa Republike Hrvatske-Metodički organizacijski oblici rada u područjima edukacije, sporta, sportske rekreacije i kineziterapije* (pp. 226-232). Starc, G., Strel, J., & Kovač, M. (2010). *Telesni in gibalni razvoj slovenskih otrok in mladine v številkah: šolsko leto 2007/08*. Fakulteta za šport.
- Strel, J., Kovač, M., Rogelj, A., Leskošek, B., Jurak, G., Starc, G., ... & Kolenc, M. (2003). *Ovrednotenje spremljave gibalnega in telesnega razvoja otrok in mladine v šolskem letu 2001-2002 in primerjava nekaterih parametrov športnovzgojnega kartona s šolskim letom 2000-2001 ter z obdobjem 1990-2000*. Zavod za šport Slovenije.