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THE IMPACT OF PHYSICAL FITNESS PARAMETERS UPON THE SUCCESS OF SPRINT RUNNING ON 30, 80, AND 100 METERS AMONG STUDENTS AGED 14

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Abstract

This paper investigates the impact of physical fitness parameters on the success of sprint running on 30, 80, and 100 meters. This paper aims to determine the relationship between physical fitness parameters as a predictive system upon running on 30, 80, and 100 meters as a criteria system. The research was conducted with 80 males of 14 years ± 6 months, in the primary school "Naim Frasheri" - Kumanovo. The research used a total of 16 variables, of which 13 variables in assessing the physical fitness parameters and 3 variables in assessing the specific - motor abilities. The variables for the assessment of physical fitness parameters are: 1. Leg tapping (LT), 2. Hand tapping (HT), 3. Leg tapping in the wall (LTW), 4. Abdominal muscle for 30'' (AM30''), 5. Raising the trunk for 30'' of Swedish box (RTSB30), 6. Squats (SQU), 7. Push-ups (PU), 8. Seat and reach (SR), 9. Splits (SP), 10. Sliding with a stick (SS), 11. Eigth with bending (EB), 12. 10X5 shuttle run (10X5Sh), 13. T-test agility (TTA), while the variables for the assessment of the specific - motor abilities are: 14. Running 30 meters (RU30m), 15. Running 80 meters (RU80) and Running 100 meters (RU100m). Based on the results of the regression analysis, predictor variables are taken as thirteen variables to assess the physical fitness parameters, while criteria are taken as three variables for the assessment of specific motor compartment, and the following can be concluded: physical fitness parameters used as predictor variables in this paper, have a statistically significant impact upon the criteria variables for running 30 meters (RU30m), running 80 meters (RU80m) and running 100 meters (RU100m). The variables of physical fitness (as a predictor system), have a significant statistical impact upon all three criteria variables RU30m, RU80m, and RU100m, with a significance level Q=0.000. Of all the predictor variables tested in this paper, statistically significant influence on the dependent variable running 30 meters (RU30m), running 80 meters (RU80m), and Running 100 meters (RU100m), there are four predictor variables as well: Eigth with bending (EB), Foot tapping in the wall (FTW), Hand taping (HT) and Raising the trunk for 30'' of Swedish box (RTSB30). What we can conclude is that men of this age who possess a segmental speed of the lower and upper extremities, agility, and repetitive strength in the muscles of the back have better results in sprint runs.

Keywords: physical fitness parameters, sprint running, students, correlation, regression analysis.

1. Introduction

Physical fitness refers to the ability of your body systems to work together efficiently to allow you to be healthy and to perform activities of daily living. Being efficient means doing daily activities with the least effort possible (Bushman, 2017: 3). Physical fitness refers to the body's ability to manage the process of movement, which in a person can change throughout his life (Iseni, 2022: 16). Physical fitness is made up of 11 parts - 6 of their health-related and 5 skill related. All of the parts are important to good performance in physical activity, including sports (ACSM's, 2008: 4). These parts of fitness are body composition, cardiorespiratory endurance, flexibility, muscular endurance, power, and strength. As the name implies, skill-related physical fitness components help you perform well in sports and other activities that require motor skills. It has been proven that physical fitness components are closely related to sprinting (Durandt, 2006: 155). A characteristic of sprint running is that the movements are realized with maximum intensity, and therefore mastering this technique is much more difficult than running medium and long distances that are realized at a lower speed. In the structure of the sprint running movements we distinguish four phases: starting position, starting acceleration, running at maximum speed, and finish (Radic, 2006: 32), (Radic, 2013:47). Achieving good results in sprint running depends primarily on the explosive strength of the runner and the speed of the neuromuscular reaction (Asllani, 2016: 27). Explosive power as a motor ability is one of the main determinants of success in almost any sporting activity, where that activity is realized in the shortest possible time (Newton, 1994: 22). Specific training for the development of explosive force, in theory, is called "Plyometric training", and if it is a training method then it is called "plyometric method" (Marullo, 1999: 11). Very few articles focus on the sprint runs of 14-year-old athletes and students. Some authors consider functional and motor skills to be among the most important skills used for sprint running success (Homenkov, 1977: 21), (Brown, 2000: 12), (Milanovic, 2007: 67). Tests for the assessment of functional abilities such as the vital capacity of the lungs, the pulse during and after physical activity are important indicators in the sprint races at 200 and 400 meters (Iseni, 2016: 83). In sports, speed means the most intensive application of human motoric actions in the shortest period. In other words; "The ability to react as soon as possible to a stimulus result". Speed development, which is low before school age, increases rapidly from this period up to the age of 13 years. A good reaction rate can be achieved at ages 9-10. While latent duration was between 0.50 and 0.60 sec in children aged 6-7 years, for 10-year olds it decreases until between 0.25 - 0.40 sec. Reaction speed during the second school age reaches almost the value of adults (Kesilmis, 2012: 67).

Important predictors for achieving the speed of movements are: high activity of the neuro-muscular system, elasticity, respectively flexibility, and ability to loosen (release) the muscle, the quality of the sports technique and the biochemical situation in the periphery of the locomotor system (Pauole, 2000: 444). Speed is a skill that can mostly be influenced only at a certain age and with the help of a good selection of exercises. An important factor of the speed of movement is the sports technique, which means that when working on the efficiency of the movement, all excessive movements must be avoided so that the "natural" speed can be fully performed (Iseni, 2011: 92). Power, technique, and sprint-specific endurance are considered key underlying determinants of 100-m sprint performance (Rumpf, 2016: 1768), (Haugen, 2019: 1274). The main purpose of this research was to determine the impact of physical fitness parameters on the results of sprint running. The results of research on the impact of physical fitness parameters on sprinters have theoretical and practical value for the training process because this research will give us new scientific information about the value of motor tests, especially for explosive force, agility, segmental velocity, and repetitive force tests which test mostly affect the performance of sprint runs, which in this paper, we practice, as the most appropriate runs for this age category, running at 30, 80 and 100 meters.

2. Methods

2.1. Sample entities: The population sample was drawn from male students of 14 years ± 6 months. The research was conducted with 80 respondents in the primary school "Naim Frasheri" – Kumanovo (n=80, height=166.8, weight=58.1, BMI=20.8). The sample in this research is non-selective in relation to physical fitness parameters and specifically - motor abilities, ie running short distances. The results obtained from this research will be taken only by the respondents who regularly attended physical education classes and participated in all motor tests.

2.2. Measurement variables and procedures: The research used a total of 16 variables, of which 1 for the assessment of physical fitness or predictor parameters and 3 variables for the assessment of specific - motor abilities or criterion variables. The variables for assessing physical fitness parameters are: 1. Leg tapping (LT), 2. Hand tapping (HT), 3. Leg tapping in the wall (LTW), 4. Abdominal muscle for 30'' (AM30''), 5. Raising the trunk for 30'' of Swedish box (RTSB30), 6. Squats (SQU), 7. Push-ups (PU), 8. Seat and reach

(SR), 9. Splits (SP), 10. Sliding with a stick (SS), 11. Eigth with bending (EB), 12. 10X5 shuttle run (10X5Sh), 13. T-test agility (TTA), while the variables to assess the specific - motor abilities are: 14. Running 30 meters (RU30m), 15. Running 80 meters (RU80) and Running 100 meters (RU100m). The physical fitness variables were selected to be represented in the studies (Mackenzie, 2005: 32) and the Eurofit test (Adam, 1988: 67), (Eurofit, 1993: 21)

2.3. Statistical analysis: In order to determine the relationship between physical fitness variables as a predictive system and the situational motor variables as a criterion system, it was applied the regression analysis or method for analysis of the impact and the relationship belonging to the group of multivariate analysis (Bala, 1988: 76), (Malacko, 2000: 23). All results were calculated with the statistical program SPSS version 26.0.

3. Results

Table 1. Descriptive statistics of selected variables

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
LT	80	18.00	31.00	25.6500	2.81542	-.337	.269	-.324	.532
HT	80	16.00	42.00	29.4625	4.27221	-.163	.269	.871	.532
TLW	80	12.00	31.00	24.5875	3.86380	-.782	.269	.481	.532
AM30	80	10.00	33.00	22.9625	4.49597	-.154	.269	.505	.532
RTSB30	80	8.00	45.00	31.7500	7.04866	-.984	.269	1.990	.532
SQU	80	4.00	94.00	27.4375	15.04242	1.987	.269	6.134	.532
PU	80	.00	54.00	16.4375	10.51081	.993	.269	1.042	.532
SR	80	7.00	37.00	20.9200	6.49774	.035	.269	-.422	.532
SP	80	137.00	201.00	169.8437	15.57111	-.146	.269	-.645	.532
SS	80	53.00	173.00	99.4875	21.68357	.617	.269	.590	.532
EB	80	16.20	25.16	20.1968	1.75809	.573	.269	.575	.532
10X5SH	80	13.40	27.40	21.3575	2.21969	-.194	.269	1.119	.532
TTA	80	7.05	11.16	8.4435	.92019	.563	.269	.250	.532
RU30м	80	4.00	5.80	4.9425	.44630	-.210	.269	-.788	.532
RU80м	80	9.50	16.20	11.8125	1.38321	.414	.269	.353	.532
RU100м	80	12.30	20.40	15.4813	1.82868	.367	.269	.112	.532
Valid N (listwise)	80								

From Table 1, it can be concluded that the values of all variables have the largest difference between the minimum and maximum results. The value standard deviations in the physical fitness parameters test SQU, PU, SP and SS are at a high level, and these are heterogeneous results or results that have high variability, while the physical fitness tests LT, HT, TLW, AM30’’, BM30’’, SR, EB, 10X5SH, and TTA, are at the low level, which shows that discrimination is not satisfactory and that these are homogeneous results, i.e., results that have low variability. The asymmetry of the curve is small, in almost all variables, and some even with negative values, except for the curve of squats (SQU), where the asymmetry is small and positive, which means that the results dominate positively. The rounded value of the curve in most variables is below 2.75, so all of these values are platykurtic, which means that the results are far from the arithmetic mean, except for the curve squats (SQU), where the value is greater than the normal, and the concentration of the results is greater around the average values, and this value is leptokurtic (results greater than 4.00).

Table 2. Correlations between the dependent variable (running 30,80, 100 meters) and the independent variables (physical fitness parameters)

Correlations

	LT	HT	LTW	AM30 ’’	RTSB	SQU	PU	SR	SP	SS	EB	10X5SH	TTA	RU30м	RU80м
LT	1														
HT	.628**	1													
LTW	.452**	.535**	1												
AM30	.493**	.320**	.258*	1											
RTSB30	.119	.154	.103	.160	1										
SQU	.124	.232*	.093	.158	.106	1									
PU	.247*	.271*	.289**	.368**	.159	.066	1								
SR	.104	.211	.118	.234*	-.020	.002	.172	1							
SP	.482**	.405**	.377**	.345**	-.123	.005	.136	.337**	1						
SS	-.083	-.205	-.042	-.160	-.053	-.204	-.088	-.171	-.090	1					
EB	-.440**	-.333**	-.347**	-.325**	.114	-.035	-.290**	-.162	-.420**	.278*	1				
10X5SH	-.313**	-.204	-.196	-.235*	-.011	-.006	-.179	-.151	-.285*	.028	.464**	1			
TTA	-.294**	-.342**	-.294**	-.169	-.169	-.168	-.074	-.091	-.208	.353**	.396**	.161	1		
RU30м	-.437**	-.272*	-.531**	-.380**	-.115	-.051	-.174	-.172	-.404**	.083	.555**	.235*	.376**	1	
RU80м	-.421**	-.260*	-.450**	-.345**	-.091	-.135	-.153	-.101	-.319**	.140	.532**	.208	.395**	.869**	1
RU100м	-.331**	-.164	-.429**	-.343**	-.154	-.029	-.137	-.105	-.318**	.060	.517**	.137	.395**	.879**	.892**

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 2 shows the interconnection coefficients for all physical fitness and specific motor variables of 14-year-old students. From a total of 120 interconnection coefficients, 57 coefficients are statistically significant. High correlations are presented between RU30m and EB, with a value of .555 **, RU80m, and EB, with a value of .532**, RU30m, and LTW, with a value. -531** and RU100m and EB, with value .517. We also have coefficients with significant correlations and some coefficients with low correlation values. Out of a total of 120 interconnection coefficients, 63 coefficients are not statistically significant, which means that we will not comment on these coefficients.

Table 3. Summary model of multiple correlation between 30 meters running performance and independent variables

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.737a	.542	.452	.33028	.542	6.019	13	66	.000

a. Predictors: (Constant), TTA, PU, SQU, SR, RTSB30, 10X5SH, SS, LTW, AM30, SP, HT, EB, LT

Table 4. Regression coefficients of predictor variables on the dependent variable – (RU30m)

Coefficientsa

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	T	Sig.
1	(Constant)	4.768	.988		4.823	.000
	LT	-.019	.020	-.118	-.924	.359
	HT	.026	.013	.245	2.003	.049
	LTW	-.044	.012	-.383	-3.633	.001
	AM30	-.015	.010	-.148	-1.414	.162
	RTSB30	-.009	.006	-.137	-1.486	.142
	SQU	.000	.003	-.010	-.116	.908
	PU	.005	.004	.106	1.114	.269
	SR	-.005	.006	-.073	-.791	.432
	SP	-.003	.003	-.091	-.837	.405
	SS	-.002	.002	-.096	-1.006	.318
	EB	.107	.030	.420	3.593	.001
	M10X5	-.019	.019	-.094	-.977	.332
	MTT	.062	.049	.128	1.273	.207

a. Dependent Variable: RU30м

Multiple correlations between the system of predictor variables and the criterion variable (RU30m) are shown in Table 3 and its value is 0.737, ie the stated correlation explains the common variability with around 54.2% (R2 = 0.542). The remaining 45.8% in explaining the variability of the criterion variable (RU30m), can be attributed to some other anthropological characteristics that were not included in these studies (functional, cognitive, cognitive, social, etc.). From the presented regression analysis of the variable RU30m, it can be seen that there is a statistically significant influence between the predictor system and the criterion variable, as shown by the signifier with a value of 0.000. It is worth mentioning that of the entire predictor system, the greatest individual influence on the criterion variable 30-meter run has the following variables: Eigth with bending (EB) with a positive value of the standardized beta coefficient .420 and a reliability level of 0.001, leg tapping in the wall (LTW) with a negative value of the standardized beta coefficient -.383 and a reliability level of 0.001 and the variable hand tapping (HT) with a positive value of the standardized beta coefficient .245 and a reliability level of 0.049.

Table 5. Summary model of multiple correlation between 80 meters running performance and independent variables

Model Summary

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.673a	.453	.345	1.11951	.453	4.200	13	66	.000

a. Predictors: (Constant), TTA, PU, SQU, SR, RTSB30, 10X5SH, SS, LTW, AM30, SP, HT, EB, LT

Table 6. Regression coefficients of predictor variables on the dependent variable – (RU80m)

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.210	3.350		2.749	.008
	LT	-.080	.068	-.162	-1.166	.248
	HT	.071	.043	.219	1.639	.106
	LTW	-.106	.041	-.295	-2.560	.013
	AM30	-.039	.035	-.126	-1.097	.276
	RTSB30	-.017	.020	-.087	-.862	.392
	SQU	-.008	.009	-.084	-.872	.386
	PU	.012	.014	.093	.893	.375
	SR	-.004	.022	-.019	-.185	.854
	SP	-.002	.011	-.019	-.157	.876
	SS	-.003	.007	-.046	-.438	.663
	EB	.319	.101	.406	3.173	.002
	10X5SH	-.056	.066	-.091	-.860	.393
	TTA	.236	.165	.157	1.431	.157

a. Dependent Variable: RU80м

Table 5, which shows the regression analysis of the variable RU80m, shows that there is a statistically significant correlation between the predictor system and the criterion variable (R = 0.673), at the level of Q = 0.000, ie the correlation explains the common variability with 45.3% (R = 0.453). The remaining 54.7% in its explanation can be attributed to some approximate characteristics and abilities of the respondents that were not covered in these surveys. Individually, the largest impact from the predictor system on the criterion variable RU80m has the variable eight with bending (EB) (table 6), with a positive value of the standardized beta coefficient of .406 and a reliability level of 0.002, and variable leg tapping in the wall (LTW) with a negative value of the standardized beta coefficient -.295 and a reliability level of 0.013 where this value has a negative sign which means that the impact of the variable LTW on the variable RU30m is negative. From this we can conclude that the lower will be the value of leg tapping in the wall, the weaker the result will be in running 80 meters and vice versa.

Table 7. Summary model of multiple correlation between 100 meters running performance and independent variables

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change
1	.710a	.504	.406	1.40971	.504	5.149	13	66	.000

a. Predictors: (Constant), TTA, PU, SQU, SR, RTSB30, 10X5SH, SS, LTW, AM30, SP, HT, EB, LT

Table 8. Regression coefficients of predictor variables on the dependent variable – (RU100m)

Coefficientsa

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	11.700	4.219		2.773	.007
	LT	-.025	.086	-.038	-.288	.774
	HT	.123	.055	.288	2.260	.027
	LTW	-.146	.052	-.309	-2.816	.006
	AM30	-.075	.044	-.184	-1.683	.097
	RTSB30	-.050	.025	-.192	-2.002	.049
	SQU	7.536E-5	.011	.001	.007	.995
	PU	.019	.017	.109	1.095	.277
	SR	-.009	.027	-.032	-.329	.743
	SP	-.010	.013	-.083	-.732	.467
	SS	-.012	.008	-.142	-1.433	.156
	EB	.508	.127	.489	4.008	.000
	M10X5	-.154	.083	-.187	-1.858	.068
	MTT	.403	.208	.203	1.940	.057

a. Dependent Variable: RU100м

Multiple correlations between the system of predictor variables and the criterion variable (RU30m) are shown in Table 7 and its value is 0.710, ie the stated correlation explains the common variability with around 50.4% (R2 = 0.504). The remaining 49.6% in explaining the variability of the criterion variable (RU30m), can be attributed to some other anthropological characteristics that were not included in these studies (functional, cognitive, cognitive, social, etc.). From the presented regression analysis of the variable RU30m, it can be seen that there is a statistically significant influence between the predictor system and the criterion variable, as shown by the signifier with a value of 0.000. It is worth mentioning that of the entire predictor system, the greatest individual influence on the criterion variable 100-meter run has the following variables: Eigth with bending (EB) with a positive value of the standardized beta coefficient .489 and a reliability level of 0.000, variable leg tapping in the wall (LTW) with negative values of the standardized beta coefficient -.309 and a reliability level of 0.006, variable hand tapping (HT) with a positive value of the standardized betta coefficient .288 and a reliability level of 0.027 and the variable raising the trunk for 30 seconds of Swedish box (RTSB30) with a negative value of the standardized beta coefficient -.192 and a reliability level of 0.049.

4. Discussion

In this study, the main purpose was to verify the impact of physical fitness variables as criterion variables, in the criterion variables running in 30 meters (RU30m), running in 80 meters (RU80m), and running in 100 meters (RU100m). From the examination of the results, it was confirmed that the physical fitness variables have an impact with statistical significance on the criterion variables running at 30, 80, and 100 meters. (Radic, 2009: 158) set as a goal to prove the influence of some morphological and physical fitness variables on the results of the sprint run in 100 meters. The research was conducted on a sample of 125 students of the Faculty of Physical Education in Skopje. Based on the obtained results, it was proved that morphological characteristics have no statistically significant impact on the result of running in 100 meters, while physical fitness variables have an impact with statistical significance on running in 100 meters, especially the factor F1 - factor of explosive force and speed of the lower extremities and factor F2 - factor of the explosive force of the upper extremities. (Przulj, 2011: 182) investigated the impact of functional skills on the results of sprint running in young athletes. The research was conducted in a sample of 30 entities – with 14 years old primary school students in the city of Niš. The results of the regression analysis showed the significant statistical significance of the heart tests at rest, heart after exercise, the vital capacity of the lungs, and the Margariev test in the criterion variables running at 300 and 400 meters. (Zivkovic, 2011: 124) investigated the impact of flexibility and explosive force on the results of sprint disciplines. The sample of entities was composed of 14-years old primary school students who, in addition to physical education classes, also attended additional classes from the athletics section. The results from this study confirmed that tests for assessing flexibility and explosive strength have an effective impact on improving results in sprint runs at 100 and 200 meters. (Iseni, 2013: 107) has investigated the impact of physical fitness variables on the success of sprint runs at 20 and 60 meters.

The research was conducted in a sample of 40 male entities 10-14 years old at the “Teuta” Karate Club - Kumanovo. The author concluded that karate players who possess the most advanced degree of physical fitness parameters, defined as explosive force, speed, mobility, and flexibility, will achieve better results in sprint runs at 20 and 60 meters. (Iseni, 2013: 49) have investigated the impact of motor skills on the success of sprint running at 200 meters. The research was conducted on a sample of 130 male student’s aged 16, students of high school in Kumanovo. Individual influence on the variable running criteria at 200 meters has shown the variable standing long jump, which means that the variable for the assessment of explosive force has a high impact on improving the results in sprint running at 200 meters. (Ciliik, 2013: 39) investigated the impact and correlation between tests for assessing speed and endurance at speed on running in young sprinters. The research was conducted on a sample of 7 athletes, with 14 years old, members of an athletics club in Slovakia. The results showed that sprinters had better results in speed than medium and long-distance runners, while lower results in speed endurance tests. The authors concluded that the jump test from the sitting position on the Miotest ergometer gives a significant impact on the development of speed and explosive force in sprinters. (Stojanovic, 2014: 77) investigated the impact of basic and specific physical fitness variables on 60-meter running results. The research was conducted on a sample of 30 high school students in Paracin. The results of the regression analysis showed that there are statistically significant influences between the predictive variables in the criterion variable running at 60 meters, of which the most important influence showed the specific-motor variables: jump in distance with weights and running at 300 meters, while from the basic-motor variables: standing long jump and running at 20 meters. (Blazevic, 2014: 23) in a sample of 150 entities, of which 70 students and 80 students, aged 8 years, conducted research to verify the impact between some physical fitness parameters and kinetic parameters in the sprint run at 50 meters. The authors concluded that statistically significant impact on 50-meter running in students - boys show predictive variables triple jump, while the girls show the static jump from the tensiometric platform - countermovement jump (CMJ). (Atanaskovic, 2014: 148) set out with the aim to prove the effect of myogenic weight training with explosive force on the explosive force in the lower extremities. The research was conducted in a sample of 36 student entities 11-14 years old. The study had a longitudinal character and lasted 6 weeks. Based on the obtained results, the authors concluded that there are statistically significant differences between the initial and final measurements in the experimental group, at the level of 0.000 reliability, from which they concluded that myogenic training with loads/exercises has a positive impact on the development of explosive force lower extremities and is almost ideal, especially for developing sports performance in sprinters. (Iseni, 2015: 135) have investigated the impact of specific motor skills on the 100 meters sprint.

The research was conducted on a sample of 60 male persons aged 14 years, students in primary school "Naim Frasheri" – Kumanovo. Individual influence on the variable running at 100 meters has shown the variables sliding with a stick, variable eigth with bending, and variable standing long jump, which means that the variable for the assessment of flexibility, agility, and explosive force has a high impact on improving the results in sprint running at 100 meters. (Malyadi, 2019: 624) applied training for the development of explosive force in sprint running in 100 meters, with 14 students aged 14 years old, and concluded that the program for the development of explosive force has a positive impact with statistical significance on the result of sprint running in 100 meters and the starting speed of the athletes. (Iseni, 2020: 10) have investigated the impact of physical fitness variables on the success of sprint runs at 30 and 80 meters. The research was conducted on a sample of 170 male students aged 14, students of primary schools in Kumanovo. The interpreted results conclude that between the predictive system and the variables running criteria at 30 and 80 meters, there is a correlation with statistically significant impact, where individual influence on the variables running criteria at 30 and 80 meters, have shown the variables taping with the foot on the wall, agility tests eights with bending and T-test, which means that the variables for the assessment of segmental speed and the assessment of agility, have a high impact on improving the results in sprint runs at 30 and 80 meters.

5. Conclusion

Based on the obtained results and performed analyzes, it can be concluded that:
The physical fitness variables used as predictor variables in this paper have a statistically significant impact on the criterion variables running at 30 meters (RU30m), running at 80 meters (RU80m), and running at 100 meters (RU100m). From these results, we can conclude that students of this age who possess physical fitness parameters such as segmental speed of the lower and upper extremities, agility, and repetitive strength, will achieve better results in sprint runs of 30 meters, 80 meters, and 100 meters. From here we can recommend to all coaches and teachers involved in the development of athletics or more specifically sprinting as one of the most attractive disciplines in running, to practice these types of motor tests to develop the segmental speed of the lower and upper extremities, agility and repetitive strength in their curriculum of exercise, and also if it is possible at least twice a year to conduct measurements of motor abilities and other anthropological premises to see the current and final condition of students and to achieve the best results within school sports, and also in professional sports.

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