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CORRELATION OF BODY CHARACTERISTICS WITH PERFORMANCE OF YOUNG MALE SKI RACERS IN INDIVIDUAL DISCIPLINES IN ALPINE SKIING

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Introduction

- Biological development can be characterized as a process of qualitative and quantitative changes that occur from birth to full biological maturity, usually up to 20 years of age (Škof, 2016).
- The physical or body characteristics depends primarily on our biological development and adolescence is a rapid period of body development and physical growth.
- This connection must also be taken into account, when planning the performance of young alpine skiers (Bandalo, 2016). The use of the model theory by designing a performance model of alpine skiing, can be a usefull tool (Lešnik, 1996).
- Bandalo and Lešnik (2011) summarize some research and believe that the potential success of young athletes in alpine skiing can be evaluated on the basis of the state of the selected motor skills and body charasteristics.
- According to that, was the purpose of the study to present the correlation between the body characteristics with the performance in individual disciplines of the young alpine skiers.

Methods

- The sample consisted of 26 boys' age 15 and 16. They were all categorized athletes at the Slovenian Ski Association and had actively competed in the season 2018/2019.
- We measured the body characteristics at the Faculty of sport with four standardized tests before the competition season.
- For competitive performance, the criterion was the number of points scored for the national competition Award Nordica Dobermann.
- For data processing we used the statistical program IBM SPSS and Microsoft Excell.
- In descriptive statistics, we first calculated standard deviation, minimum and maximum value.
- For the calculation of the correlation, the Spearman correlation coefficient and multiple linear regression, analysis was used.

Results

Table 1. *Correlation of body characteristics with performance of young male ski racers in individual disciplines in alpine skiing*

		Slalom	Giant slalom	Super G
AV	r	0,00	0,22	0,28
	p	0,99	0,27	0,17
	N	26	26	26
AM	r	0,13	0,22	0,29
	p	0,52	0,29	0,15
	N	26	26	26
% MISMT	r	0,19	0,37	0,26
	p	0,34	0,06	0,20
	N	26	26	26
% MASMT	r	-0,07	-0,09	-0,12
	p	0,73	0,67	0,56
	N	26	26	26

Legend: r – Spearman correlation coefficient; p – statistical correlation; N – number of the sample; AV – body height; AM – body weight; % MISMT – percentage of muscle mass, % MASMT – percentage of body fat.

We found that the model of all four physical characteristics and performance, the correlation was statistically significant (p (0.05) in the giant slalom.

https://aktivni.metropolitan.si/ostali-sporti/smucanje/test-smuci/tekmovalne-veleslalomske-2018-19/

Results

Table 1. *Multiple linear regression analysis model of physical characteristics and performance of young male ski racers in individual disciplines in alpine skiing*

	Corrected R^2	p
Slalom	0,05	0,30
Giant slalom	0,28	0,03
Super G	0,11	0,17

	Slalom	Giant slalom	Super G
	p	p	p
(Constant)	0,35	0,53	0,76
AV	0,13	0,10	0,20
AM	0,09	0,02	0,07
% MISMT	0,63	0,38	0,40
% MASMT	0,47	0,39	0,67

Legend: p - statistical correlation; corrected R2 - determination coefficient;AV – body height; AM – body weight; % MISMT – percentage of muscle mass, % MASMT – percentage of body fat.

We found that the competitive performance of boys in giant slalom can be predicted from the variables of physical characteristics with a 28% probability (R2 = 0.28).

http://www.novinar-drustvo.si/2019/05/17/zan-kranjec-zmaga-tekmovalno-smucanje-zan-kranjec/

Conclusions

- The findings show a potential correlation between body charasteristics and performance on the sample of young male Slovenian alpine skiers. However, due to the age of the subjects, it is likely that body charasteristics in relation to performance are not yet fully expressed.
- We still believe (according to Bandalo and Lešnik, 2011) that the potential success of young athletes in alpine skiing can be evaluated on the basis of the state of selected motor skills and body charasteristics .
- Further research is needed to better predict performance in young alpine skiers.
- Also methodological limitations must be taken into account when interpreting the data, since the sample was relatively small.
- We conclude that the findings are still interesting to anyone who trains young alpine skiers and plans their performance.

Literature

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