



University of Ljubljana
Faculty of sport

CORRELATION OF MOTOR ABILITIES WITH PERFORMANCE OF YOUNG MALE SKI RACERS IN INDIVIDUAL DISCIPLINES IN ALPINE SKIING

Klemen Krejač, Blaž Lešnik, Tine Sattler

Ljubljana, 2021

Introduction

- The conditions for achieving success in alpine skiing are today very complex and require top technical knowledge (Bosco, 1997).
- In determining the performance of athletes, the objective reality could be closest only, if we had the opportunity to consider and measure all the dimensions that in any way affect the ultimate performance of the individual (Bandalo, 2016). When we know that this is not feasible, we use the model theory by designing a performance model (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 selected motor skills.
- According to that, was the purpose of the study to present the correlation between the motor abilities with the performance in individual disciplines on the sampe 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 motor abilities at the Faculty of sport, University of Ljubljana, with nine 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 was used.

Results

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

		Slalom	Giant slalom	Super G
MSKOK10	r	0,39	0,41	0,33
	p	0,05	0,04	0,10
	N	26	26	26
MT400	r	-0,35	-0,43	-0,41
	p	0,08	0,03	0,04
	N	26	26	26
SKI9	r	-0,40	-0,14	-0,05
	p	0,05	0,51	0,83
	N	25	25	25
MS20LVMX	r	0,31	0,32	0,33
	p	0,12	0,11	0,10
	N	26	26	26
MMEBOSCO	r	0,23	0,25	0,26
	p	0,26	0,21	0,20
	N	26	26	26
MRBALCH	r	-0,38	-0,41	-0,48
	p	0,06	0,04	0,01
	N	26	26	26
MZIBNP	r	0,48	0,70	0,59
	p	0,01	0,00	0,00
	N	26	26	26
STABTRUP	r	0,38	0,23	0,23
	p	0,06	0,27	0,26
	N	26	26	26
TECMJVIS	r	0,48	0,42	0,30
	p	0,01	0,03	0,14
	N	26	26	26

- We found that performance in the slalom was statistically significant correlated with the ten-jump test ($p \leq 0.05$), agility ($p \leq 0.05$), pull-ups ($p \leq 0.01$), and height jump test ($p \leq 0.01$).
- In the giant slalom, the correlation was statistically significant in the ten-jump test ($p \leq 0.05$), running at 400 m ($p \leq 0.05$), balance ($p \leq 0.05$), pull-ups ($p \leq 0.01$) and height jump test ($p \leq 0.03$).

Legend: r – Spearman correlation coefficient; p – statistical correlation; N – number of the sample; MSKOK10 – ten connected long jumps; MT400 – 400 m run; SKI9 – eights around 9 pins; MS20LVMX – running speed (m/s) from 10 to 30 m; MMEBOSCO – Bosco test; MRBALCH – balance test, MZIBNP – pull ups; STABTRUP – trunk stabilization; TECMJVIS – high jump on the tensiometric plate.

Conclusions

- The findings show a potential correlation between motor skills and performance on the sample of young male Slovenian alpine skiers. However, due to the age of the subjects, it is likely that motor skills 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.
- 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

1. Bosco, C. (1997). Evaluation and planning of conditioning training for alpine skiers. V E. Müller, H. Schwameder, E. Kornexl, & C. Raschner, *Science and skiing* (str. 229–250). London: E & FN Spon.
2. Bandalo, M. (2016). *Dinamika sprememb morfoloških in motroričnih dimenzij mladih tekmovalcev v alpskem smučanju v obdobju od leta 2001 do 2010*. (Doktorska disertacija). Univerza v Ljubljani, Fakulteta za šport, Ljubljana.
3. Bandalo, M., & Lešnik, B. (2011). Povezanost med izbranimi antropometričnimi in motoričnimi spremenljivkami s tekmovalno uspešnostjo mladih tekmovalcev v alpskem smučanju. *Kinesiologia Slovenica*, 17(3), 16–31.
4. Lešnik, B. (1996). *Vrednotenje modela uspešnosti mlajših dečkov v alpskem smučanju*. (Magistrsko delo). Univerza v Ljubljani, Fakulteta za šport, Ljubljana.