Journal of Combat Sports and Martial Arts
© MEDSPORTPRESS, 2011; 1(2); Vol. 2, 31-34

List of tests for evaluation of motor ability level of advanced classical style wrestlers

Włodzimierz Starosta, Tadeusz Rynkiewicz

University School of Physical Education in Poznan, Faculty of Physical Culture in Gorzow, Poland

Key words: tests battery, level of movement preparation, wrestlers classical style, Polish elite – national team.

Summary

Introduction. The process of sport training requires rational development of movement abilities, as well as technical and tactical skills of the athletes. An improvement in its effectiveness necessitates not only the application of appropriate loads, but also the control of the scope and direction of the occurring changes. To allow an evaluation of the effectiveness of the training process and the level of movement abilities in advanced wrestlers, studies, the aim of which was to seek an optimal set of tests, were undertaken. Use was made of relative results, i.e. such results from which the impact on test results of body weight of the tested athletes was eliminated.

Material and methods. The studies comprised 45 wrestlers aged 15-20, with average training period amounting to 6.6 years and of sport advancement level ranging from the first to national champion sport class. A wide range of tests was applied to carry out an evaluation of general and special physical and co-ordination movement abilities [5]. Among others the following tests were performed: maximum rotation in a jump, zigzag run, run with forward roll, pulling up, flexing and straightening arms in support, pressing the barbell in lying, barbell clean and jerk, twisting bends of the torso, lifting the barbell to the chest, squatting with barbell, maximum leap, a 20m run, a 1500m run, bending of the trunk backwards, forward throw, backward throw, backward somersault, forward somersault, "scrambling", "bridging", "pressing from shoulders" and "bridging passes".

Results. With the use of the method in which features are grouped, they were divided into several groups characterised by high mutual similarity. It was decided that of prime importance were physical, general and special coordination abilities. Tests, the results of which showed the smallest similarity, were also determined. Among them were: speed values in 20m and 1500m runs, results of tests of global movement coordination and basic body build indices.

Conclusions. An analysis of correlation indices was applied and a reduction of multiple regression was made to select an optimum set of tests for evaluation of general and special preparation of wrestlers. Furthermore, tests on the basis of a compromise between supplying sufficient range of information and avoiding considerable impediments in the implementation of the training process, were also included.

Introduction

The process of sport training requires rational development of motor abilities, as well as technical and tactical skills of the athletes. An improvement in its effectiveness necessitates not only the application of appropriate loads, but also the control of scope and direction of occurring changes. To allow an evaluation of the effectiveness of the training process and level of motor abilities in advanced wrestlers, scientific studies have been undertaken in the past, based on results which not in each case took body mass into consideration [1-5]. The aim of our studies was as follows: 1. To seek an optimal set of tests to determine the level of predominating motor abilities of advanced wrestlers. 2. To take into consideration in this set also global movement coordination of general and special character. To implement those aims, use was made of relative results, i.e. results from which impact of body mass of tested subjects on test results was eliminated.

Material and methods

The studies comprised 45 wrestlers aged 15-20 years, with average training period amounting to 6.6 years and sport advancement level from first sport class to national champion sport class. A wide range of tests was applied to carry out an evaluation of general and special fitness and coordination motor abilities [5].

Results

The list and results of applied tests were presented in (Tab. 1). With the use of the method in which traits are group-

Test	Measure		SD	Min.	Max.
Maximum turn in jump	[o/kg]	11.462	6.136	19.982	3.387
Zigzag run	[s/kg]	0.332	0.225	0.464	0.059
Run with forward roll	[s/kg]	0.173	0.121	0.249	0.032
Pulling up on a bar	[n/kg]	0.167	0.009	0.312	0.064
Flexing and straightening arms in support	[n/kg]	0.363	0.080	0.692	0.144
Lifting barbell in recumbent position	[kG/kg]	1.242	0.796	1.611	0.175
Lifting barbell to the chest	[kG/kg]	1.125	0.841	1.337	0.122
Squatting with barbell	[kG/kg]	1.452	1.150	1.718	0.130
Barbell clean and jerk	[kG/kg]	0.789	0.593	0.926	0.084
Twisting bend of the torso	[n/kg]	0.257	0.010	0.579	0.136
Maximum vertical jump	[cm/kg]	0.757	0.389	1.049	0.149
20m run	[km/s]	814.2	517.7	1181.2	162.2
1500m run	[kgm/s]	315.8	194.2	427.2	58.5
Backward bend of the torso	[cm/kg]	1.021	0.543	8.770	1.192
Forward throw	[s/kg]	0.056	0.013	0.099	0.021
Backward throw	[s/kg]	0.045	0.029	0.064	0.008
Forward somersault	[s/kg]	0.050	0.008	0.091	0.023
Backward somersault	[s/kg]	0.029	0.006	0.084	0.026
“scrambling”	[s/kg]	0.177	0.124	0.242	0.035
“Bridging”	[s/kg]	0.030	0.021	0.042	0.006
“Escapement from shoulders”	[s/kg]	0.131	0.073	0.858	0.119
“Bridging passes”	[s/kg]	0.079	0.058	0.115	0.016

Table 1. Results obtained by wrestlers in conducted tests (n=45)

ed, they were divided into several groups characterised by high mutual similarity. It was decided that of prime importance were physical abilities, general and special coordination abilities (Fig. 1).

Also determined were tests, the results of which showed the smallest similarity. Among them were: speed values in 20 m and 1500 m runs, results of tests of global movement coordination and basic body build indices. By making an analysis of correlation coefficients and by making a reduction in models of multiple regressions, an optimum test set was selected for evaluation of general and special training of wrestlers (Fig. 2).

The set included also tests with the smallest mutual similarity and one test each from three groups of high similarity level (Fig. 1). These included momentum acquired in distances that allow an evaluation of speed and endurance. Furthermore, also tests for evaluation of: maximum force – explosive type, strength endurance, and global movement coordination. The tests that were included into the set were of a global and general character. The only test attempt that was directly connected with special training for wrestlers was “bridging”. Tests included in the set were selected in an endeavour at finding a compromise between the need of providing a sufficient scope of information about a wrestler, and simultaneously not causing significant impediments in implementation of the training process.

Conclusions

1. Tests used for evaluation of the motor ability level of the wrestlers should take their body mass into consideration. A comparison of results achieved by athletes with considerable differences in body mass may lead to ambiguous and even misleading conclusions. The body mass may be of prime importance for the level of motor abilities. The scope and character of its impact may either be positive or negative.

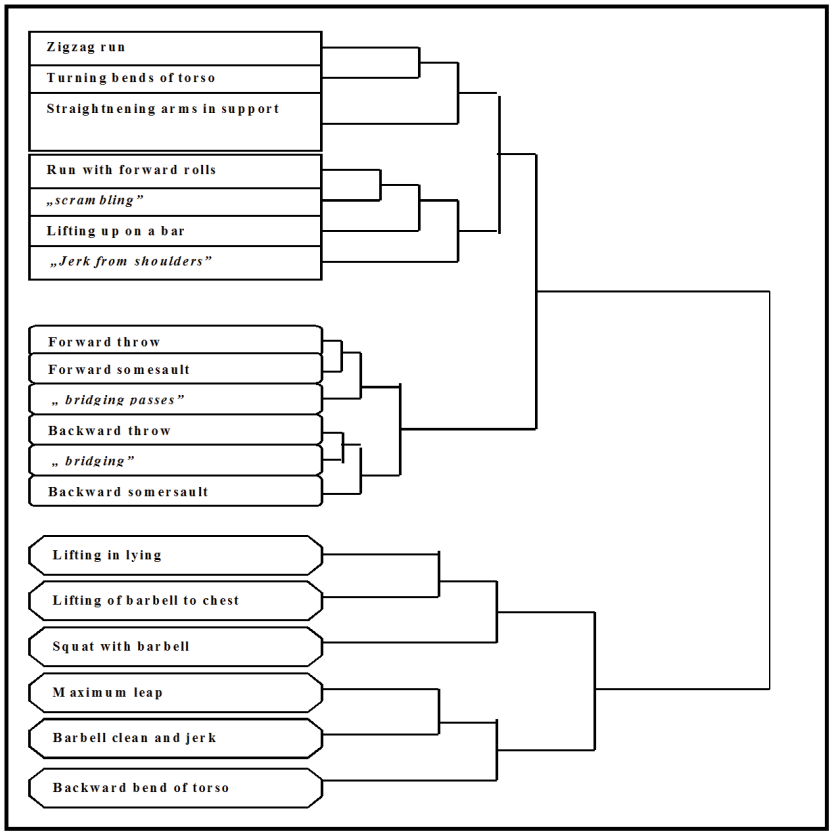

Fig. 1. Results of test grouping for evaluation of acquired fitness of wrestlers (n = 45)

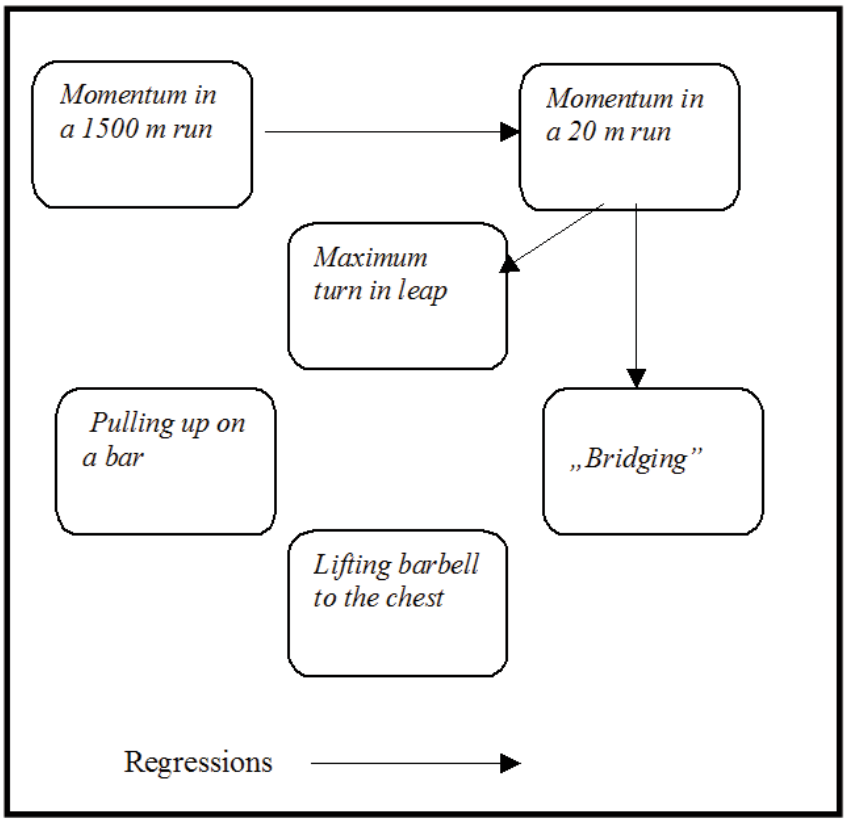

Fig. 2. Set of tests for evaluation of the level of motor abilities in advanced wrestlers (n = 45)

2. The proposed test set seems to be sufficiently diagnostic in character and at the same time simple in application. It took into consideration manifestations of elementary physical motor abilities and global movement coordination of general (test of W. Starosta) and special character ("bridging").

References

1. Glaz A, Starosta W. Structure of physical ability of wrestlers classical style. Warsaw: Year Scientific Book of University School; 1993: (Vol. 34): 175-194.
2. Starosta W. General and special efficiency of advanced wrestlers (free and classical style) in light of investigations conducted in years 1981-1984. Warsaw: Institute of Sport; 1984: p. 1-82.
3. Starosta W, Glaz A. Searching of a motor efficiency model of a wrestling champion. Warsaw: Year Scientific Book of University School; 1998 (Vol. 37): p. 175-189.
4. Starosta W, Glaz A, Tracewski J. Variation of selected agility (coordination) indices in young wrestlers during training. Biology of Sport 1985: 75-86.
5. Starosta W, Tracewski J. List of tests of general and special efficiency for advanced wrestlers (free and classical style). Warsaw: Institute of Sport; 1981: p. 1-52

Address for correspondence:
Włodzimierz Starosta
Institute of Sport
Trylogii 2/16, 01-982 Warsaw, Poland
phone: +48 (22) 834-95-07, e-mail: wlodzimierz.starosta@insp.wa.pl

Received: 24.02.2011
Accepted: 24.06.2011