

Selecting a Specialized Physical Assessment Test for Female Wrestlers Aged 14-15

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Abstract— Using conventional research methods in Physical Education and Sports, the article has selected 14 tests to assess the professional physical fitness of female Freestyle wrestlers aged 14-15, namely: assessment of speed (2 tests); assessment of strength (6 tests); assessment of endurance (3 tests) and assessment of motor coordination ability (3 tests).

Keywords— professional physical fitness, female athlete, freestyle wrestling, age 14-15.

I. INTRODUCTION

In recent years, improving Vietnam's sports achievements to the top level in Southeast Asia and gradually approaching the world has become a national and ethnic requirement to affirm Vietnam's cultural, economic and political level in the international arena.

Faced with this situation, the Sports and Physical Training sector has put forward a strategy to innovate the training of sports talents, including paying attention to the need to focus on developing a number of key sports (strengths) to participate and achieve high results at regional and international sports events.

In regional and international competitions, Vietnamese Freestyle Wrestling athletes always achieve high rankings, so Freestyle Wrestling is identified as one of the key sports of Vietnamese Sports. This also shows that we have a relatively complete training system for Freestyle Wrestling athletes.

However, to achieve high and stable results in major international competitions, the completion of the training system for athletes is always a concern for Vietnamese Freestyle Wrestling professionals, in which special attention must be paid to the selection of tests and the development of a system of standards for assessing athletes' physical fitness during training. However, this has not really received due attention.

Based on the above reasons, we conducted the study: "SELECTING A TEST TO ASSESS THE SPECIALIZED PHYSICAL FITNESS OF FEMALE WRESTLERS AGED 14-15".

Research method: the research process used the following methods: document analysis and synthesis; discussion interviews, pedagogical observation and statistical mathematics.

The research subjects were 40 female Freestyle wrestlers aged 14-15 at units with a tradition of training female Freestyle wrestlers in the Northern provinces.

The collected data were processed using SPSS 16 software.

II. RESEARCH RESULTS AND DISCUSSION

2.1. Interview to select physical fitness assessment test for female Freestyle wrestlers aged 14-15.

Through the methods of analysis and synthesis and through practical investigation, the topic has identified 28 indicators, tests to evaluate the physical level of female Freestyle wrestlers aged 14-15 (as presented specifically in Table 1).

In order to determine the feasibility of the tests, the topic conducted interviews with lecturers and coaches who are directly teaching and coaching Freestyle Wrestling. The results are presented in Table 1 and Table 2.

Table 1. Results of interviews to select physical fitness assessment tests for female Freestyle wrestlers aged 14-15 (n = 31)

No	Qualities	Test	Prioritize 1	Prioritize 2	Prioritize 3	Prioritize 4	Prioritize 5	$\bar{x}$
1.	Quick power	Run 30m high start (s)	10	12	9	0	0	4.03
2.		Carry 15kg weight, sit down and stand up 15s (sl)	2	5	19	5	0	3.13
3.		Crawl escape 15s (sl)	5	7	11	7	1	3.26
4.		Move across 9x4m mat (s)	3	5	14	8	1	3.03
5.		Catch reflex 15s (sl)	15	14	2	0	0	4.42
6.	Power	Lie prone and do push-ups 1 minute (sl)	16	12	2	1	0	4.39
7.		Jump far in place (cm)	15	14	1	1	0	4.39
8.		Jump with a person of equal weight 30s (times)	17	8	6	0	0	4.35
9.		Double grab with a person of equal weight 30s (times)	18	3	10	0	0	4.26
10.		Wrap over the shoulder with a person of equal weight 10s (times)	3	5	14	8	1	3.03
11.		Jump with a person of equal weight 30s (times)	4	4	17	6	0	3.19
12.		Hang on a ladder with legs touching the handle as much as possible (times)	3	6	18	3	1	3.23
13.		Crawl in place for 1 minute (times)	14	11	6	0	0	4.26
14.		Lie down after 1 minute (rounds)	14	13	4	0	0	4.32
15.	Endurance	3000m run (s)	5	4	15	6	1	3.19
16.		Maximum continuous lunge with equal weight (sl)	16	13	2	0	0	4.45
17.		1 minute continuous platform jump (sl)	6	2	16	6	1	3.19
18.		1 minute continuous flank curl with equal weight (sl)	3	7	19	2	0	3.35
19.		Maximum continuous double lift with equal weight (sl)	18	12	1	0	0	4.55
20.		Maximum rotation of rainbow (revolutions)	15	13	2	1	0	4.35
21.	Motor coordination	30m high start run 3600 mid-run on command (s)	5	5	18	3	0	3.39

22.		Zigzag run 30m (s)	6	2	15	7	1	3.16
23.		Vertical split (cm)	5	3	16	6	1	3.16
24.		Horizontal split (cm)	4	6	15	5	1	3.23
25.		Forward bend (cm)	16	11	4	0	0	4.39
26.		Rainbow rotation forward - backward 30 seconds (rounds).	15	13	2	1	0	4.35
27.		Pick up and lift with a person of equal weight continuously for 1 minute (sl)	5	5	18	3	0	3.39
28.		Rainbow height (cm)	14	13	4			4.32

Table 3.2. Results of two interviews to select physical fitness assessment tests for female Freestyle wrestlers aged 14-15 (n = 31)

No	Qualities	Test	Time	n	Prioritize 1	Prioritize 2	Prioritize 3	Prioritize 4	Prioritize 5	$\bar{x}$	Chi squared
1.	Quick power	30m high start run (s)	1st	31	10	12	9	0	0	4.03	0.3
			2nd	31	9	11	11	0	0	3.94	
2.		Carrying a 15 kg weight, sitting down and standing up 15s (sl)	1st	31	2	5	19	5	0	3.13	0.31
			2nd	31	3	4	19	5	0	3.16	
3.		Crawling 15s (sl)	1st	31	5	7	11	7	1	3.26	1.88
			2nd	31	6	8	8	9	0	3.35	
4.		Moving across the 9x4m mat (s)	1st	31	3	5	14	8	1	3.03	0.08
			2nd	31	3	5	13	9	1	3.03	
5.		Taking up reflex 15s (sl)	1st	31	15	14	2	0	0	4.42	0.07
			2nd	31	14	15	2	0	0	4.39	
6.	Power	Lying prone and doing push-ups for 1 minute (sl)	1st	31	16	12	2	1	0	4.39	0.52
			2nd	31	15	14	1	1	0	4.39	
7.		Jumping on the spot (cm)	1st	31	15	14	1	1	0	4.39	1.4
			2nd	31	14	15	2	0	0	4.39	
8.		Straightening with a partner 30s (times)	1st	31	17	8	6	0	0	4.35	0.52
			2nd	31	16	8	7	0	0	4.29	
9.		Double picking up with a partner 30s (times)	1st	31	18	3	10	0	0	4.26	0.08
			2nd	31	19	3	9	0	0	4.32	
10.		Wrap around the shoulders with a partner 10s (times)	1st time	31	3	5	14	8	1	3.03	1.29
			2nd time	31	4	4	15	8	0	3.13	

11.		Jumping with a person of equal weight 30s (times)	1st time	31	4	4	17	6	0	3.19	0.36
			2nd time	31	5	3	16	7	0	3.19	
12.		Hang on a ladder, bend your legs and touch the handle as much as possible (times)	1st time	31	3	6	18	3	1	3.23	1.76
			2nd time	31	4	5	17	5	0	3.26	
13.		Crawl in place for 1 minute (times)	1st	31	14	11	6	0	0	4.26	0.48
			2nd	31	15	12	4	0	0	4.35	
14.		Loop down after 1 minute (revolutions)	1st	31	14	13	4	0	0	4.32	2.74
			2nd	31	15	12	2	2	0	4.29	
15.	Endurance	Run 3000m (times)	1st	31	5	4	15	6	1	3.19	1.72
			2nd	31	3	5	16	7	0	3.13	
16.		Jump with a person of equal weight continuously for maximum (times)	1st	31	16	13	2	0	0	4.45	0.37
			2nd	31	14	14	3	0	0	4.35	
17.		Jump on the platform continuously for 1 minute (times)	1st	31	6	2	16	6	1	3.19	1.32
			2nd	31	5	3	17	6	0	3.23	
18.		Rib Claw with equal weight continuously for 1 minute (sl)	1st	31	3	7	19	2	0	3.35	0.67
			2nd	31	4	8	16	3	0	3.42	
19.		Double Pick with equal weight continuously for maximum (sl)	1st	31	18	12	1	0	0	4.55	0.27
			2nd	31	16	14	1	0	0	4.48	
20.		Rainbow rotates for maximum (revs).	1st	31	15	13	2	1	0	4.35	1.03
			2nd	31	16	13	2	0	0	4.45	
21.	Motor coordination	Run 30m high start, rotate 3600 in the middle of the interval on command (s)	1st	31	5	5	18	3	0	3.39	1.7
			2nd	31	5	5	17	4	0	3.39	
22.		Zigzag Run 30m (s)	1st	31	6	2	15	7	1	3.16	0.29
			2nd	31	5	3	15	7	1	3.13	
23.		Longitudinal Split (cm)	1st	31	5	3	16	6	1	3.16	1.57
			2nd	31	5	3	12	10	1	3.03	
24.		Side Split (cm)	1st	31	4	6	15	5	1	3.23	0.13

			2nd	31	4	6	14	6	1	3.19	
25.	Forward bend (cm)	1st	31	16	11	4	0	0	0	4.39	0.19
		2nd	31	16	12	3	0	0	0	4.42	
26.	Rainbow rotation forward - backward 30 seconds (rounds).	1st	31	15	13	2	1	0	0	4.35	1.2
		2nd	31	15	13	3	0	0	0	4.39	
27.	Pick up and lift with a person of equal weight continuously for 1 minute (sl)	1st	31	5	5	18	3	0	0	3.39	0.29
		2nd	31	6	5	18	2	0	0	3.48	
28.	Rainbow height (cm)	1st	31	14	13	4	0	0	0	4.32	2.74
		2nd	31	15	12	2	1	1	1	4.26	

From the results in Table 1 and Table 2, it can be seen that, in the 28 tests given to the lecturers and coaches for interviews, 14 tests were chosen by the majority of opinions to assess the professional physical fitness of female Freestyle wrestlers aged 14-15, namely:

- Assessment of speed including 2 tests (Running 30m with high start (s); Reflex picking 15 s (sl)),

- Assessment of strength including 6 tests (Lying prone with hand push-ups for 1 minute (sl); Jumping long in place (cm); Bouncing with a person of the same weight for 30 seconds (times); Double picking with a person of the same weight for 30 seconds (times); Crawling in place for 1 minute (sl); Bouncing after 1 minute (rounds)),

- Assessment of endurance including 3 tests: Bouncing with a person of the same weight continuously at maximum (sl); Double picking with a person of the same weight continuously at maximum (sl); Maximum rotation of the rainbow (revolutions). - Assessment of motor coordination ability includes 3 tests: Forward bending (cm); Rainbow rotation forward - backward for 30 seconds (revolutions); High rainbow (cm).

2.2. Results of testing the reliability and informativeness of physical fitness assessment tests for female freestyle wrestlers aged 14-15

Results of reliability testing of the tests

In order to determine the reliability of the selected tests, we conducted a reliability test of the selected test system. The above test system was tested twice under the same conditions and at the same time. The results are shown in Table 3.

Results of the test's informativeness

After determining the reliability of the tests using the retest method, the thesis continued to determine the Brave - Pison pair correlation coefficient (r) between the test results and the athlete's performance in the athlete's specialty. The results are shown in Table 4.

The results in Tables 3 and 4 show that all the tests selected through interviews ensure the necessary statistical reliability (with r ranging from 0.905 - 0.991) and ensure informativeness (with r ranging from 0.805 - 0.899).

In summary: through research steps (analyzing and synthesizing documents; interviewing lecturers and coaches; determining the reliability and informativeness of the tests), the topic has selected 14 tests to assess the professional physical fitness of female Freestyle Wrestling athletes aged 14-15, which are:

- Speed assessment includes 2 tests (Running 30m with high start (s); Reflexive lifting 15 s (sl)),

- Strength assessment includes 6 tests (Prone push-ups for 1 minute (sl); Long jump in place (cm); Bouncing with a person of the same weight for 30 seconds (times); Double pick-up with a person of the same weight for 30 seconds (times); Crawling in place for 1 minute (sl); Bouncing back after 1 minute (rounds)),

- Endurance assessment includes 3 tests: Maximum continuous bouncing with a person of the same weight (sl); Maximum continuous double pick-up with a person of the same weight (sl); Maximum rotation of the rainbow (rounds).

- Motor coordination assessment includes 3 tests: Forward bending (cm); Rainbow rotation forward - backward for 30 seconds (rounds); Rainbow height (cm).

Table 3. Reliability test results of physical fitness assessment tests for female Freestyle wrestlers aged 14-15

No	Test, index	Age 15 (n=22)				Age 16 (n=18)			
		First time ($\bar{x} \pm \delta$)	2nd time ($\bar{x} \pm \delta$)	r	P	First time ($\bar{x} \pm \delta$)	2nd time ($\bar{x} \pm \delta$)	r	P
1	30m high start run (s)	4.52±0.23	4.53±0.17	0.969	<0.05	4.32±0.12	4.29±0.08	0.920	<0.05
2	15 s(sl)	14.55±1.5 3	14.68±1.3 9	0.976	<0.05	15.79±0.2 8	15.92±0.2 8	0.964	<0.05
3	1 minute prone push-up (sl)	31.68±1.2 9	31.86±0.9 4	0.906	<0.05	33.72±1.0 2	33.78±1.0 6	0.975	<0.05
4	On-the-spot long jump (cm)	212.81±1.62	212.67±1.62	0.980	<0.05	214.58±0.90	214.64±1	0.975	<0.05
5	30s (times)	14.86±1.0 4	15.05±1.0 5	0.928	<0.05	16.72±0.9 6	16.78±1.0 6	0.978	<0.05
6	30s (times)	16.32±1.1 3	16.68±1.1 3	0.905	<0.05	17.89±0.5 8	17.94±0.6 4	0.930	<0.05
7	30s (times)	25.59±1.4 4	26±1.31	0.937	<0.05	28.00±0.6 9	28.06±0.7 3	0.946	<0.05
8	1 minute (times)	21.64±2.3 4	21.86±1.9 1	0.947	<0.05	23.61±0.8 5	23.67±0.8 4	0.961	<0.05
9	1 minute (times)	24.77±1.2 3	24.77±1.1 5	0.935	<0.05	26.78±1.0 6	26.89±1.1 8	0.917	<0.05
10	1 minute (times) crawling (sl)	25.32±1.6 2	25.91±0.8 7	0.905	<0.05	27.72±0.8 3	27.78±0.8 8	0.964	<0.05
11	1 minute (times) back bend (reverse)	24.14±1.8 3	25.05±1.4 3	0.942	<0.05	27.11±1.1 8	27.17±1.2 5	0.983	<0.05
12	Maximum continuous maximum ...	5.64±0.16	5.77±0.16	0.991	<0.05	5.24±0.14	5.25±0.15	0.912	<0.05
13	30m high start run (s)	15.55±1.4 1	16±1.45	0.937	<0.05	17.11±0.7 6	17.17±0.7 9	0.954	<0.05
14	15 s(sl)	41.34±0.4 9	41.45±0.5 2	0.988	<0.05	40.79±0.3 6	40.82±0.3 6	0.947	<0.05

Table 4. Results of the validity of the physical fitness assessment tests for female Freestyle wrestlers aged 14-15

No	Test, index	Age 15 (n=22)		Age 16 (n=18)		P
		($\bar{x} \pm \delta$)	r	($\bar{x} \pm \delta$)	r	
1	30m high start run (s)	4.53±0.17	0.873	4.29±0.08	0.848	<0.05
2	15 s(sl)	14.68±1.39	0.845	14.92±0.28	0.873	<0.05
3	1 minute prone push-up (sl)	31.86±0.94	0.831	32.78±1.06	0.883	<0.05
4	On-the-spot long jump (cm)	212.67±1.62	0.852	214.64±1	0.857	<0.05
5	30s (times)	15.05±1.05	0.822	15.78±1.06	0.851	<0.05
6	30s (times)	16.68±1.13	0.845	16.72±0.75	0.816	<0.05

No	Test, index	Age 15 (n=22)		Age 16 (n=18)		P
		$(\bar{x} \pm \delta)$	r	$(\bar{x} \pm \delta)$	r	
7	30s (times)	26±1.31	0.869	27±0.69	0.899	<0.05
8	1 minute (times)	21.86±1.91	0.870	22.56±0.7	0.891	<0.05
9	1 minute (times)	24.77±1.15	0.820	25.39±0.78	0.814	<0.05
10	1 minute (times) crawling (sl)	25.91±0.87	0.838	26.67±0.77	0.805	<0.05
11	1 minute (times) back bend (reverse)	25.05±1.43	0.861	26.17±1.25	0.866	<0.05
12	Maximum continuous maximum ...	5.77±0.16	0.877	5.25±0.15	0.884	<0.05
13	30m high start run (s)	16±1.45	0.868	17.17±0.79	0.890	<0.05
14	15 s(sl)	41.45±0.52	0.839	40.82±0.36	0.883	<0.05

III. CONCLUSION

From the research results, the topic has selected 14 tests to assess the professional physical strength of female Freestyle wrestlers aged 14-15, which are:

- Assessment of speed including 2 tests (Running 30m with high start (s); Reflex picking 15 s (sl)),

- Assessment of strength including 6 tests (Lying prone with hand push-ups for 1 minute (sl); Jumping far in place (cm); Bouncing with a person of equal weight for 30 seconds (times); Bouncing in place for 1 minute (sl); Bouncing after 1 minute (rounds)),

- Assessment of endurance including 3 tests: Bouncing with a person of equal weight continuously at maximum (sl); Bouncing with a person of equal weight continuously at maximum (sl); Bouncing with a person of equal weight continuously at maximum (sl); Bouncing with a person of equal weight continuously at maximum (rounds).

- Assessment of motor coordination ability includes 3 tests: Forward bending (cm); 30-second forward and backward rainbow (circles); High rainbow (cm).

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SOURCE OF THE ARTICLE

The article is extracted from the results of the thesis: *"Research on exercises to develop specialized physical strength for female Freestyle wrestlers aged 14 - 15"*. The thesis was conducted by PhD student Ta Dinh Duc at the Institute of Culture, Arts, Sports and Tourism of Vietnam.