

Effects of a Recommended Training Program, Using Elastic Cords, for Enhancing Muscle Strength on Developing the Performance Level of Fall-On-Foot Skill for Free Style Wrestlers

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Abstract: Wrestling has evolved from a violence-dependant sport into a sport governed by rule and regulations. Developing physical and technical performances affects results greatly. This research aimed at designing a training program using elastic cords to develop special muscle strength of falling on foot skill for free style wrestler and identifying the effect of the training program on developing the effectiveness of performing falling on foot skill for free style wrestler. Sample was purposefully chosen from Gifted Club – Nasr City free style wrestling team (12 wrestlers) with means age of 15 years. Sample was divided randomly into two groups (6 wrestlers each) to form the experimental and control group. The researchers used the quasi-experimental approach with two groups (experimental and control) and pre / post- tests. The researchers concluded that the post- measurements of the physical variables and technical variables of performing the fall-on-foot skill were significantly enhanced compared to the pre-tests for the control group due to the traditional training program. The post- measurements of the physical variables and technical variables of performing the fall-on-foot skill were significantly enhanced compared to the pre-tests for the experimental group due to the recommended training program. The experimental group showed significant enhancements on the post-measurements of the physical variables and technical variables of performing the fall-on-foot skill compared to the control group.

Key words: Specific training • Fall on foot • Strength • Wrestling

INTRODUCTION

Free style wrestling is a type of wrestling where fight covers all body parts. If the free style wrestler is to control his opponent, he should control either one or both his opponent foots. International regulations give wrestlers the opportunity to be positive. One of the most positive duties of a wrestler is to fall on the opponent's foots and to try to control him to turn him on his back and gain enough points to win the round, or even the match. Wrestlers who are excelled in performing ground position skills should try to perform the fall-on-foot skill from the high position to reach the ground position.

According to new amendments of the international regulations, any retreat outside the mat would give the opponent a full point. The best attack in free style wrestling is the fall-on-foot skill. In case of equality in points (0-0) the international regulations state that there should be a toss to give the winner an opportunity to

perform this skill. And the wrestler who fails to perform it loses the match as reaching the opponent's foots is the key to control him and needs a great deal of speed, strength and technical performance.

Sport-specific strength training programs are fundamental to an athlete development and success. Long gone are the days when coaches shunned weight lifting for fear hindering the performance of fine skills and correct techniques. It is now accepted that high levels of strength are a prerequisite to superior speed, power, strength endurance and overall sporting performance [1].

Sport specific training has been designed for a wide variety of sports, but each sport has its own specialized program. Each sport has its own unique characteristics, using different muscle groups and concentrating on coordinating different parts of the athlete's body. A soccer player should not be trained exactly as a softball player or hockey player would be. If you're involved with wrestling you know that you are involved in one of the

most physically and mentally taxing sports out there. While wrestling is mainly a sport of "practice makes perfect", there are still many things that you can work on off the mat. Working on things like explosive power, flexibility, balance, stamina and quickness are imperative if you want to be successful in wrestling. By working on these areas, you can increase your leverage, energy and physicality to levels [2].

One previous study used specific training exercises to enhance coordinative abilities of swimming pool guards. Sample included 20 swimming pool guards and the researcher used the experimental approach. Results showed significant increases in the post-measurements on strength, endurance and skills level of the sample. Another study designed a specific training program with weights to develop the effectiveness of technical performance for 30 wrestlers. The researcher used the experimental approach. Results showed significant enhancements in skills performance level due to the applied program. A third study used some special strength aids to develop the effectiveness of high leverage skills group on 60 wrestlers. Results showed significant increases in the skills level due to the use of such aids. Another study designed a specific training program to enhance the effectiveness of some judo skills and applied it on 10 judo players. The program led to increasing the performance level of the studied skills [3-6].

It is known that most wrestling skills are ancient but its importance is decided according to the regulations' amendments. Analyzing Egypt's wrestling championship (2008-2009), it was clear that first place wrestlers gained points from falling on the opponent's foot (59% of total scored points) while fifth place wrestlers lost because they only gained (18%) of their points from falling on the opponent's foot. Through watching BIJIN Olympics, Egyptian wrestlers were less trying to fall on the opponent's foot in free style leading them all to lose. Most international wrestlers are excelled in doing this skill like the Russian legendary wrestler Staieve Fofiza who gained three gold Olympic medals and world title of 74kg. Also the American John Smith, world champion and holder of two gold Olympic medals. This clearly indicates the importance of this skill for free style wrestlers.

As one of the researchers was a former coach of the Olympic national team, the researchers noticed that Egyptian wrestlers do not perform this skill well, especially in world championships of 2006 and 2007 and BIJIN Olympics. This led the researchers to design this specific training program using elastic cords to enhance the effectiveness of performing the fall-on-foot skill.

The current research aims at designing a training program using elastic cords to develop special muscle strength of falling on foot skill for free style wrestler and identifying its effect on developing the effectiveness of performing falling on foot skill for free style wrestler.

The researchers hypothesized that:

- There are statistical significant differences between the pre and post- measurements on all the variables under investigation for the control group in favor of the post-measurement.
- There are statistical significant differences between the pre and post- measurements on all the variables under investigation for the experimental group in favor of the post-measurement.
- There are statistical significant differences between the post- measurements of the two groups on all the variables under investigation in favor of the experimental group.

MATERIALS AND METHODS

Approach: The researchers used the quasi-experimental approach with two groups (experimental and control) and pre/post- tests.

Sample: Sample was purposefully chosen from Gifted Club – Nasr City free style wrestling team (12 wrestlers) with means age of 15 years. Sample was divided randomly into two groups (6 wrestlers each) to form the experimental and control group. All members of the sample signed a written informed consent before recruited in the sample. Sample equivalence showed that the chosen sample was homogenous and free of radical distributions as shown in Table 1.

Tools and Tests: The following tools were used to record the physical variables: A restameter. - A medical balance - A dynamometer - A spirometer - A wrestling mat - A stopwatch - A manometer - A video player - A video camera - Wrestling mat - Iron bar - Different weights - Technical performance of fall-on-foot skill evaluation form.

The following physical tests were used in the study: Right fist strength. - Left fist strength. - Back muscles strength. - Foot muscles strength. - Full knee bend. - Weight high push. - Arm flexion with bar. - Inclined lying from standing (30 sec). - Inclined lying (60 sec). - Sit up (30 sec). Full knee bend (10 sec). - Weight high pushes (10 sec). - Arm flexion with bar (10 sec). - Inclined lying from standing (10 sec). - Inclined lying (10 sec). - Sit up (10 sec) (Appendix 1).

Table 1: Sample description and homogeneity

Variable	Measurement	Experimental group		Control group		(t) Values
		Means	SD	Means	SD	
Age	Year	15.10	4.67	15.26	3.03	0.37
Height	Cm	166.66	10.53	168.00	10.77	0.58
Weight	Kg	54.66	0.89	54.16	0.98	0.081
Training period	Years	2.00	0.74	2.16	0.81	0.30
Pulse	Number	71.66	2.33809	71.66	1.96	0.00
Vital capacity	Cm3	3216.66	75.27727	3250.00	54.77	0.87
back muscles strength	Kg	80.00	4.60	78.50	4.63	0.56
foot muscles strength	Kg	81.66	4.13	80.16	4.70	0.58
right fest strength	Kg	39.00	16.19	32.00	1.09	1.05
left fest strength	Kg	30.83	0.98	30.50	1.04	0.56
Full knee bend	Number	45.00	3.16	44.16	3.76	0.41
Weight high push	Number	22.50	2.73	21.66	2.58	0.54
Arm flexion with bar	Number	17.33	2.58	17.16	2.48	0.11
Inclined lying from standing (30sec)	Number	18.66	0.81	18.83	0.75	0.36
Inclined lying (60sec)	Number	23.16	3.12	22.33	2.25	0.53
Sit up (30sec)	Number	20.66	1.21	20.00	1.41	0.87
Full knee bend (10 sec)	Number	4.66	0.51	4.50	0.54	0.54
Weight high push (10 sec)	Number	5.66	0.52	5.66	0.51	0.00
Arm flexion with bar (10 sec)	Number	6.33	0.51	6.50	0.54	0.54
Inclined lying from standing (10 sec)	Number	3.33	0.52	3.66	0.51	1.11
Inclined lying (10 sec)	Number	7.83	1.16	7.83	0.40	0.00
Sit up (10 sec)	Number	7.66	0.51	7.50	0.54	0.54
Inclined lying from standing (10 sec)	Number	1.50	0.54	1.33	0.51	0.54
Number of falls with a positive partner (60 sec)	Number	1.83	0.75	2.00	0.63	0.41
Scored points	Number	5.50	0.54	5.33	0.51	0.54
Number of falls with a passive partner (20 sec)	Number	10.83	1.32	10.50	0.83	0.52
Scored points	Number	15.10	4.67	15.26	3.03	0.37

(t) value on $P \leq 0.05 = 1.81$

The following technical tests were used in the study:

- The effectiveness of technical performance of fall-on-foot (60 sec) for positive defender.
- The effectiveness of technical performance of fall-on-foot (60 sec) for negative mates (Appendix 1).

The researchers used video recording to evaluate the effectiveness of technical performance of fall-on-foot skill so that judges can evaluate the skill objectively according to international regulation of armature free style wrestling.

Statistical Treatments: Means - Standard deviation - (t) Test – Pearson simple Correlation coefficient.

Pilot Study: The researchers performed the pilot study from 26/9 /2009 to 3/10/2009 on a sample of 6 wrestlers from the same research community and outside the main sample for reliability and validity coefficients of the used tests and 12 wrestlers for reliability, validity and objectivity coefficients of the used forms.

Pre-Measurements: Pre-measurements were taken in the wrestling hall of Gifted Club – Nasr City for two days from 7/10/2009 to 8/10/ 2009. Measurements were taken for all sample members for each player individually.

Measurements began with height, weight, age and years of training for each player followed by physiological variables (2) then physical characteristics (16) and technical performance (4) for each player. The researchers performed measurements in the form of stations for all

members of the two groups as each wrestler passed each station orderly. Physiological and physical measurements were taken in the first day and technical performance tests were done on the second day.

Main Study: The program aimed at developing specific muscle strength to increase technical performance level of fall-on-foot skill of free style wrestlers. Duration of the training program was for 12 weeks from 10/10/2009 to 6/1/2010 with 4 training units per week. The program was divided into 47 units (70:95 minutes each).

After the pilot study and pre-measurements, the researchers started the recommended training program on the experimental group (Appendix 2) while the control group trained traditionally.

Post-Measurements: Post-measurements were taken on two days from 9/1/2010 to 10/1/2010. The researchers considered that the same partner of the pre- test should be on the post-test. In addition, rest intervals between tests and order of performing tests is the same for pre and post- tests.

Appendix 1: Exercises for developing muscular strength and technical performance of fall-on-foot skill

- Elastic cord attached to the rear wall and right foot. Move forward.

- Elastic cord attached to the rear wall and left foot. Move forward.
- Elastic cord attached to the rear wall and right and left. Move forward.
- Elastic cord attached to the rear wall and back of the wrestler. Fall on feet
- Elastic cord attached to the rear wall and right hand. Pull hand forward and backward.
- Elastic cord attached to the rear wall and left hand. Pull hand forward and backward
- Elastic cord attached to the rear wall and right and left hands. Fall forward on feet.
- Elastic cord attached to the rear wall and right and left hands and right and left feet. Fall forward on feet
- Elastic cord attached to the rear wall and right and left hands and right and left feet and back. Fall forward on feet
- Sitting on four. Standing up then falling forward (Elastic cord attached to the rear wall and right and left hands and right and left feet and back)
- Carrying a partner while the cord is attached to back and walking forward 3 steps and return.
- Carrying a partner on shoulder while the cord is attached to back and walking forward 4 steps and return on foot and knee (up and down).
- Hitting a medical ball to the floor and falling under the ball (elastic cord attached to back and wall).

Appendix 2: The program (First month)

Training units	Warming up	Skill from up	Skill from down	Corde training		Corde in the back,						
				Training number	Time	Fall on foot & Corde in the back	Catch the foot & Try to control	Open wrestling	Falling on foot	Relax-ation	Inten-sity	Unit time
1	20m	8m	6m	1,2,3,7	20m	2m	4m	3m	2m	20m	55%	85m
2	20m	8m	6m	1,2,3,5	20m	2m	4m	3m	2m	20m	55%	85m
3	20m	8m	6m	1,2,3,6	20m	2m	4m	3m	2m	20m	55%	85m
4	20m	8m	6m	1,2,3,4	20m	2m	4m	3m	2m	20m	60%	85m
5	20m	8m	6m	3,4,5,8	20m	2m	4m	3m	2m	20m	60%	85m
6	20m	8m	6m	5,6,1,2	20m	2m	4m	3m	2m	20m	60%	85m
7	20m	8m	6m	1,2,5,6	20m	2m	4m	3m	2m	20m	60%	85m
8	20m	8m	6m	10,13,5,6	20m	2m	4m	3m	2m	20m	65%	85m
9	20m	8m	6m	10,11,5,6	20m	2m	4m	3m	2m	20m	65%	85m
10	20m	8m	6m	10,11,6,9	20m	2m	4m	3m	2m	20m	65%	85m
11	20m	6m	4m	10,11,6,5	20m	2m	4m	3m	2m	20m	65%	85m
12	20m	6m	4m	10,13,6,5	20m	2m	4m	3m	2m	20m	70%	85m
13	20m	6m	4m	10,11,5,6	20m	2m	4m	3m	2m	20m	70%	85m
14	20m	6m	4m	12,5,6,9	20m	2m	4m	3m	2m	20m	70%	85m
15	20m	6m	4m	12,5,6,9	20m	2m	4m	3m	2m	20m	65%	85m
16	20m	6m	4m	12,5,6,9	20m	2m	4m	3m	2m	20m	70%	85m

m= Minute

The program (second month)

Training units	Warming up	Skill from up (50% Falling on foot)	Skill from down	Corde training		Corde in the back,				Relax-ation	Inten-sity	Unit time
				Training number	Time	Fall on foot & Corde in the back	Catch the foot & Try to control	Open wrestling	Falling on foot			
1	20m	5m	3m	12,11,7,9	24m	2m	6m	4m	2m	15m	75%	81m
2	20m	5m	3m	10,12,11,9	24m	2m	6m	4m	2m	15m	75%	81m
3	20m	5m	3m	7,10,12,11	24m	2m	6m	4m	2m	15m	75%	81m
4	20m	5m	3m	7,10,13,11	24m	2m	6m	4m	2m	15m	70%	82m
5	20m	5m	3m	10,12,11,7	24m	2m	6m	4m	3m	15m	70%	83m
6	20m	5m	3m	3,9,10,11	24m	2m	6m	5m	3m	15m	75%	83m
7	20m	5m	3m	3,9,12,10	24m	2m	6m	5m	3m	15m	75%	83m
8	20m	5m	3m	3,9,10,11	24m	2m	6m	5m	3m	15m	80%	82m
9	20m	4m	3m	3,9,12,10	24m	2m	6m	5m	3m	15m	80%	84m
10	20m	4m	3m	3,9,10,7	24m	4m	6m	5m	3m	15m	80%	85m
11	20m	4m	3m	7,9,10,3	25m	4m	6m	5m	3m	15m	80%	85m
12	20m	4m	3m	7,9,10,11	25m	4m	6m	4m	4m	15m	75%	85m
13	20m	4m	3m	7,9,12,13	25m	4m	8m	4m	4m	15m	80%	87m
14	20m	4m	3m	7,9,12,11	26m	4m	8m	4m	4m	15m	80%	88m
15	20m	4m	3m	7,9,12,11	26m	4m	8m	4m	4m	15m	80%	88m
16	20m	4m	3m	7,9,12,10	26m	4m	8m	4m	4m	15m	85%	88m

m= Minute

The program (third month)

Training units	Warming up	Skill from up (50% Falling on foot)	Skill from down	Corde training		Corde in the back,				Relax-ation	Inten-sity	Unit time
				Training number	Time	Fall on foot & Corde in the back	Catch the foot & Try to control	Open wrestling	Falling on foot			
1	20m	4m	3m	11,12,7	28m	5m	8m	4m	4m	15m	80%	91m
2	20m	4m	3m	11,12,7	28m	5m	6m	4m	4m	15m	80%	89m
3	20m	4m	3m	13,12,7	28m	5m	6m	3m	6m	20m	85%	95m
4	20m	4m	3m	7,1,4	28m	5m	4m	3m	6m	20m	85%	93m
5	20m	4m	3m	9,7,4	28m	5m	4m	3m	6m	20m	85%	93m
6	20m	4m	3m	9,7,4	28m	6m	4m	3m	6m	20m	85%	94m
7	20m	4m	3m	9,7,4	30m	6m	2m	4m	6m	20m	90%	95m
8	20m	4m	3m	9,7,4	30m	6m	2m	4m	6m	20m	90%	95m
9	20m	3m	3m	9,7,4	30m	6m	2m	4m	6m	20m	90%	94m
10	20m	3m	3m	9,7,4	30m	6m	2m	4m	6m	20m	90%	94m
11	20m	3m	3m	4,9,10	30m	6m	2m	4m	6m	20m	95%	94m
12	20m	3m	3m	4,9,10	30m	6m	2m	4m	6m	20m	90%	94m
13	20m	3m	3m	4,9,10	30m	6m	—	4m	8m	20m	90%	94m
14	20m	3m	3m	4,9,10	30m	5m	2m	4m	8m	20m	95%	95m
15	20m	3m	3m	4,9,10	30m	6m	2m	4m	8m	20m	95%	94m
16	20m	3m	3m	4,9,10	30m	6m	2m	4m	7m	20m	100%	95m

m = Minute

RESULTS AND DISCUSSION

From table 2, there are statistical significant differences between the pre- and post- tests of the control group in favor of the post-test. The researchers think that this is due to training and punctuality in an organized traditional training program. This of course led to an enhancement of the physical and technical abilities of wrestlers as they were exposed to a training load for each unit, including over-loads in sometimes. This led o enhancing general physical

abilities like strength, speed and endurance which, in turn, enhanced the specific muscle strength. Performing physical and technical exercises and participating in competitive trials with other wrestlers, in addition to performing the fall-on-foot skill repeatedly helped in mastering these skills and enhancing its performance and increased the number of repeating them automatically. This is in agreement with some previous studies in that traditional training programs enhance physical and technical abilities of the control group [7, 8].

Table 2: Difference significance between the pre and post-tests for the control group

Variable	Pre-test		Post-test		(t) values
	Means	SD	Means	SD	
back muscles strength	78.50	4.70	84.33	4.32	5.41
leg muscles strength	80.16	1.09	88.33	4.13	5.93
right fest strength	32.00	1.04	34.33	0.81	5.53
left fest strength	30.50	3.76	33.50	0.54	8.21
Full knee bend	44.16	2.58	51.66	2.58	6.70
Weight high push	21.66	2.58	26.83	2.48	32.0
Arm flexion with bar	17.16	0.75	21.66	2.58	9.0
Inclined lying from standing (30 sec)	18.83	2.25	23.16	1.16	13.0
Inclined lying (60sec)	22.33	1.41	26.50	1.37	7.68
Sit up (30sec)	20.00	0.54	23.66	1.36	11.0
Full knee bend (10 sec)	4.50	0.51	5.66	0.51	7.0
Weight high push (10 sec)	5.66	0.54	6.16	0.40	2.23
Arm flexion with bar (10 sec)	6.50	0.51	8.33	0.51	11.0
Inclined lying from standing (10 sec)	3.66	0.40	5.16	0.40	6.70
Inclined lying (10 sec)	7.83	0.54	9.66	0.81	5.96
Sit up (10 sec)	7.50	0.53	9.66□	0.51	13.0
Number of falls with a positive partner (60 sec)	1.33	0.51	2.50	0.54	7.0
Scored points	2.00	0.63	6.33	1.36	6.5
Number of falls with a passive partner (20 sec)	5.33	0.51	7.16	0.40	5.96
Scored points	10.50	0.83	18.66□	2.42	7.57

(t) value on $p \leq 0.05 = 2.01$

Table 3: Differences between the pre and post-tests for the experimental group

Variable	Pre-test		Post-test		(t) values
	Means	SD	Means	SD	
back muscles strength	80.0	4.60	94.00	2.52	7.59
leg muscles strength	81.6	4.13	100.50	2.16	10.27
right fest strength	32.33	1.03	37.83	1.16	24.59
left fest strength	30.83	0.98	36.83	0.40	13.41
Full knee bend	45.0	3.16	62.50	2.73	15.65
Weight high push	22.50	2.73	35.00	4.47	11.18
Arm flexion with bar	17.33	2.58	28.00	3.46	16.00
Inclined lying from standing (30sec)	18.66	0.81	29.00	0.89	49.01
Inclined lying (60sec)	23.16	3.12	34.50	3.016	20.31
Sit up (30sec)	20.66	1.21	30.16	0.40	15.34
Full knee bend (10 sec)	4.66	0.51	8.16	0.40	15.65
Weight high push (10 sec)	5.66	0.51	9.00	0.63	10.00
Arm flexion with bar (10 sec)	6.33	0.51	11.16	0.40	29.00
Inclined lying from standing (10 sec)	3.33	0.51	7.83	0.40	13.17
Inclined lying (10 sec)	7.83	1.16	13.83	0.40	10.39
Sit up (10 sec)	7.66	0.51	12.66□	0.51	19.36□
Number of falls with a positive partner (60 sec)	1.50	0.54	5.66	0.51	25.0
Scored points	1.83	0.75	14.66	1.75	13.56
Number of falls with a passive partner (20 sec)	5.50	0.54	9.66	0.51	13.55
Scored points	10.83	1.32	28.66□	1.50□	18.85

(t) value on $p \leq 0.05 = 2.01$

From table 3, there are statistical significant differences between the pre- and post- tests of the control group in favor of the post-test. The experimental group surpassed in the post-test compared to the pre-test on physical tests due to the nature of the recommended program, applied to

that group, as this program included several scientific principles of sports training that aim at enhancing specific muscles strength. The researchers include exercises similar to the skill and its motor path by using resistance exercises with rubber cords and sandbags.

Table 4: Differences between the post-tests for the control and experimental group

Variable	Experimental		Control		(t) values
	Means	SD	Means	SD	
back muscles strength	94.00	2.52	84.33	4.32	7.72
leg muscles strength	100.50	2.16	88.33	4.13	6.38
right fest strength	37.83	1.16	34.33	0.81	6.01
left fest strength	36.83	0.40	33.50	0.54	11.95
Full knee bend	62.50	2.73	51.66	2.58	7.05
Weight high push	35.00	4.47	26.83	2.48	3.58
Arm flexion with bar	28.00	3.46	21.66	2.58	3.59
Inclined lying from standing (30sec)	29.00	0.89	23.16	1.16	9.70
Inclined lying (60sec)	34.50	3.016	26.50	1.37	5.90
Sit up (30sec)	30.16	0.40	23.66	1.36	11.16
Full knee bend (10 sec)	8.16	0.40	5.66	0.51	9.30
Weight high push (10 sec)	9.00	0.63	6.16	0.40	9.22
Arm flexion with bar (10 sec)	11.16	0.40	8.33	0.51	10.54
Inclined lying from standing (10 sec)	7.83	0.40	5.16	0.40	11.31
Inclined lying (10 sec)	13.83	0.40	9.66	0.81	11.18
Sit up (10 sec)	12.66□	0.51	9.66□	0.51	10.06
Number of falls with a positive partner (60 sec)	5.66	0.51	2.50	1.36	10.30
Scored points	14.66	1.75	6.33	0.40	9.19
Number of falls with a passive partner (20 sec)	9.66	0.51	7.16	2.42	9.30
Scored points	28.66□	1.50□	18.66□	1.36	8.59

(t) value on $p \leq 0.05 = 2.01$

This is in agreement with the results of several studies in that using specific training in a manner similar to real performance enhances muscular strength significantly [7, 9- 11]. This is also in agreement with the results of other studies in that increasing the similarity between exercises and the concerned skill makes these exercises specific and enhances significantly the special strength measurements and the effectiveness of the technical performance level for wrestlers [12, 13]. This approved the second hypothesis of this study.

From table 4, there are statistical significant differences between the control and experimental groups on the post-tests in favor of the experimental group.

The excellence of the experimental group over the control is due to the recommended program's nature that follows the specific training principles. This helped wrestlers to gain physical characteristics specific to the studied skill. This is in agreement with a prior study [14] conducting that exercises similar to performance are major aids in specific physical preparation and give the athlete the needed feeling to be performed in the skill. This is also in agreement with another study [15] in that specific training is a training style that gives specific strength needed in performance. One author stated that it is important to train working muscles specifically according to its use in the sports activity [16].

The excellence of the experimental group over the control on skills performance effectiveness is due to the

recommended program's nature as both groups were very similar in performance levels in pre-tests and went through the same training and measurement conditions except that the experimental group used the recommended training program (using rubber cords, sandbags, ...etc). The similarity between specific exercises and real performance for the experimental group affected greatly the performance level of that group. This is in agreement with a previous research [17] in that performance is enhanced greatly through using specific training of the working muscles that matches its real competitive performance. This is also in agreement with several previous in that specific training enhances technical performance of different motor skills [7, 8, 11, 18, 19]. This approves the third hypothesis of this study.

The researchers concluded that the post-measurements of the physical variables and technical variables of performing the fall-on-foot skill were significantly enhanced compared to the pre-tests for the control group due to the traditional training program. The post- measurements of the physical variables and technical variables of performing the fall-on-foot skill were significantly enhanced compared to the pre-tests for the experimental group due to the recommended training program. The experimental group showed significant enhancements on the post- measurements of the physical variables and technical variables of performing the fall on foot skill compared to the control group.

Recommendation

The researchers recommend the following:

- The use of the recommended training program with specific training exercises to enhance the performance level of the fall on foot skill.
- The use of specific training programs to enhance the muscle strength of wrestlers.
- Coaches should consider using specific training programs to enhance the skills levels of their wrestlers.

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