

Effects of a Recommended Training Program on Some Complex Feints and Some Physical Variables in Junior Japanese Handball Players

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Abstract: The current research aims at designing a training program for some complex feints with the ball in junior Japanese handball players and identifying the effects of this program on some physical variables and performance level (duration-performance) and complex feints with the ball in junior Japanese handball players. The researchers used the quasi-experimental approach with one-group design and pre-/post-measurement. Sample was purposefully chosen from Japanese junior handball players-Faculty of Sports and Health Science-Fukuoka University-Japan. Sample included 40 junior players (born in 1988-1989-1990). The researchers concluded that the recommended training program had a positive effect on the post-tests of the experimental group on physical variable, with improvement percentage 1.11-15.64%, skills variables (feint duration) with improvement percentage 2.99-10.35% and skills variables (feint performance) with improvement percentage 22.39-45.59%.

Key words: Complex feint skills with the ball • Physical variables • Technical performance level

INTRODUCTION

Modern training for various team sports is a well-planned educational process, based on scientific aims to enhance the players' levels to comprehensive performance. The high level of handball performance in most world class teams reflects clearly this trend towards modern training methods. Most countries are interested in providing their national teams with modern training methods to represent these countries in international championships[1].

Handball depends on varied and changing game situations as performance conditions are not stable due to its connection with the opponent's performance and changing court situations. These situations oblige players to use complex motor patterns with the ball that include performing consecutive complex motor skills. So, it is important for training to be very similar to game situations. The player should acquire various forms of performance to choose the best form according to actual game situations. This increases the player's ability to feint and maneuver without being surprised with un-trained situations [2-4].

Handball skills are characterized by being connected and its components can not be separated as it includes various motor responses for unexpected variables from the opponent. The player plays under unpredictable circumstance, characterized by various skills demands. These demands always consist of motor patterns as handball skills mix together. Predicting game situations is one of the factors upon which the player chooses the type of performance as this also depends on his/her personal experience. When the player possesses the ball, he/she has several options (passing-shooting-running with the ball-dribbling) and he/she is facing other factors that affect the decision like opponent's response, ball direction ...etc. the decision depends on all these factors and how they interact [5, 6].

Handball is a team sports that is characterized by varied and complex nature of competition, besides including various technical skills the player should perform while moving to compete with the opponent's speed and attack. To improve the speed and accuracy of the player's motor coordination, his/her motor performance patterns should be

developed. These patterns are the frequently used special skills during the match with various motor sequences as the nature of handball changes frequently during matches [3, 7].

Complex technical performance is like a motor system that should be looked at as a whole unit where its parts' functions are integrated and linked together through many interchangeable links that give it new qualities were not originally included in its parts' characteristics [8].

Previous studies indicated that the early possession of various types for complex techniques, similar to those used in game situations, enables the player to choose the best technique for actual situations as they increase the player's ability to maneuver, feint and set up plans in different places and directions. So, the player is not taken by surprise when facing such situations. This enables him/her to accurately and quickly performs tactical duties as comprehending the plan is mentally easy but the most important thing is to successfully put the plan into action, depending on what the player possesses of various complex skills [3, 5, 9-15].

The researchers are trying to design a training program using new training types that aim at improving the players' performance level and physical abilities.

They think that improving the performance level requires, in the first place, developing the complex feint skills. They are trying to provide the players with situational experiences that enrich their physical and technical abilities through the recommended training program (situational feints training). They reviewed several previous studies dealing with this issue [1, 4, 16].

The current research aims at designing a training program for some complex feints with the ball in junior Japanese handball players and identifying the effects of this program on some physical variables and performance level (duration-performance) and complex feints with the ball in junior Japanese handball players.

The researchers hypothesized statistically significant differences between pre- and post- tests, in favor of the post- tests, on some complex feints with the ball (duration-performance).

MATERIALS AND METHODS

Approach: The researchers used the quasi-experimental approach with one-group design and pre-/post- measurement.

Table 1: Sample Description on the researcher variables (n=40)

No.	Variable	Measure	Means	Median	SD	Inflation	Squewness	
1-	Basic	Age	Year	19.35	19.08	0.43	□1.11-	0.82
2-		Height	Cm	173.59	173.55	5.17	0.38-	0.07
3-		Weight	Kg	69.47	68.38	6.46	□1.52	0.94
4-	Physical	30m run	Second	4.22	4.23	0.12	0.09	-0.48
5-		Zigzag 1	Second	11.92	11.94	0.51	-0.87	-0.05
6-		Zigzag 2	Second	9.88	9.91	0.29	0.83	-0.02
7-		9x4 run	Second	9.17	9.16	0.05	□1.22	1.29
8-		Vertical jump	Cm	59.80	61.80	10.92	□2.97	-1.59
9-		Wide jump	Cm	222.55	223.50	9.48	-0.48	-0.21
10-		Jump 5	m	12.21	12.05	0.70	0.22	0.60
11-		Jump 3	m	7.10	7.00	0.47	0.36	0.04
12-		Throwing a handball	m	39.49	39.60	2.74	0.41	□0.32
13-		Throwing a medical ball	m	7.40	7.40	1.07	-0.05	0.00
14-		Back muscles	Kg	151.63	149.50	23.84	□2.95	0.84
15-		flexibility	cm	20.38	20.35	0.13	□1.26	1.25
16-		30 seconds passes	Number	27.03	27.17	0.56	□1.45-	□0.12
17-		Shooting 10 balls	point	6.24	6.20	0.13	-0.78	0.62
18-	Shooting after dribbling	point	3.50	3.50	0.11	□1.04-	0.00	
19-	Skills	Pass, receive and dribble once then feint with body and shoot	Duration performance	6.35 6.69	6.16 7.00	0.98 2.06	□2.26 0.88	2.00 -0.24
20-		Dribble, pass and receive the feint with pass, dribble and jump shot	Duration performance	9.06 6.56	8.95 7.00	1.07 1.68	□2.15 0.03	1.46 -0.88
21-		Dribble, pass and receive then feint with body and jump shot	Duration performance	8.86 6.64	8.77 6.00	1.03 1.82	0.64 -0.73	0.78 0.72
22-		Dribble, pass and receive the feint with pass, feint with body and jump shot	Duration performance	9.08 7.35	9.33 7.00	0.85 1.58	□1.93 -0.52	-0.69 0.42
23-		Zigzag dribbling, pass, receive, feint with jump shooting, dribble then feint with pass and jump shot	Duration performance	9.55 6.61	9.50 7.00	1.16 1.56	□1.10 -0.19	0.09 -0.94

Sample: Sample was purposefully chosen from Japanese junior handball players-Faculty of Sports and Health Science-Fukuoka University-Japan. Sample included 40 junior players (born in 1988-1989-1990). Table 1 shows sample description.

Table 1 shows sample description on all research variables. It is clear that squewness value was between $3\pm$, indicating that the sample is free of radical distributions.

Tools and Tests: For measuring the researchers variable the researchers used the following tools: a restameter-electronic medical balance-stop-watch-hand balls.

For measuring physical variables, the researchers reviewed related literature to identify the group of tests to be used [10, 17-19].

The Recommended Training Program:

The recommended training program aimed at improving complex feint skills in handball. The program followed high intensity interval training for 12 weeks (4 units per week) from 4/5/2008 to 3/8/2008 in the sports hall, Faculty of Sports and Health Science-Fukuoka University-Japan. Performance was on 86% - 95% of maximum load. Performance duration was 3-7 seconds and rest intervals were 10 times the performance period. Exercise repetition was 5-8 times and warm-up and cool down durations were isolated so that the total unit duration was 15 minutes.

Statistical Treatments: The following statistical treatments are used: means-median-SD-Squeewness-Correlation coefficient (R)-(t) test-improvement Percentage [5].

RESULTS AND DISCUSSION

Table 2 showed statistically significant differences between the pre- and post- tests of the experimental group on physical variables as (t) value ranged from 1.98-15.64. (t) Table value on $p \leq 0.05 = 1.68$. This is under its calculated value shown in Table 2. It is clear also that means differences are in favor of the post-tests. Improvement percentage between pre- and post-tests ranged from 1.11% - 15.64%.

Table 3 showed statistically significant differences between the pre- and post- tests of the experimental group on technical (feint duration) variables as (t) value ranged from 3.68-9.47. (t) Table value on $p \leq 0.05 = 1.68$. This is under its calculated value shown in Table 3. It is clear also that means differences are in favor of the post-tests. Improvement percentage between pre- and post-tests ranged from (2.99% - 10.35%). There are also statistically significant differences between the pre- and post- tests of the experimental group on technical (feint performance) variables as (t) value ranged from 6.05-7.54. (t) Table value on $p \leq 0.05 = 1.68$. This is under its calculated value shown in Table 3. It is clear also that means differences are in favor of the post-tests. Improvement percentage between pre- and post-tests ranged from 22.39% - 45.59%. Improvement percentage was in favor of the post-tests.

Table 2: Difference significance between pre- and post- tests on the studied physical variables (n=40).

No.	Variables	Measurement	Pre-test		Post-test		Means difference	(t)	(%)
			Means	SD	Means	SD			
1-	30m run	Second	4.22	0.12	4.16	0.18	0.06	1.98	1.42
2-	Zigzag 1	Second	11.92	0.51	11.69	0.50	0.23	3.23	1.93
3-	Zigzag 2	Second	9.88	0.29	9.67	0.25	0.11	3.07	1.11
4-	9x4 run	Second	9.17	0.05	9.03	0.10	0.14	8.64	1.53
5-	Vertical jump	Cm	59.80	10.92	63.62	13.24	3.82	4.56	6.39
6-	Wide jump	Cm	222.55	9.48	233.2	11.32	10.65	9.86	4.79
7-	Jump 5	m	12.21	0.70	14.12	0.82	1.91	5.36	15.64
8-	Jump 3	m	7.10	0.47	7.70	0.65	0.6	4.25	8.45
9-	Throwing a handball	m	39.49	2.74	42.36	3.11	2.87	6.35	7.27
10-	Throwing a medical ball	m	7.40	1.07	8.10	0.96	0.70	4.55	9.45
11-	Back muscles	Kg	151.63	23.84	162.2	18.67	10.57	6.86	6.97
12-	flexibility	cm	20.38	0.13	22.31	0.12	1.92	7.63	9.42
13-	30 seconds passes	Number	27.03	0.56	27.62	0.47	0.59	4.31	2.16
14-	Shooting 10 balls	point	6.24	0.13	6.55	0.15	0.31	4.44	4.96
15-	Shooting after dribbling	point	3.50	0.11	3.61	0.10	0.11	5.04	3.14

(t) Table Value on $p=0.05 = 1.68$

Table 3: Difference significance between pre- and post- tests on the studied skills variable (n=40)

No.	Variables	Measurement	Pre-test		Post-test		Means difference	(t)	(%)
			Means	SD	Means	SD			
1-	Pass, receive and dribble once then feint with body and shoot	Duration	6.35	0.98	6.16	0.97	0.19	9.47	2.99
		performance	6.69	2.06	9.74	2.09	3.05	6.05	45.59
2-	Dribble, pass and receive the feint with pass, dribble and jump shot	Duration	9.06	1.07	8.52	1.26	0.54	7.92	5.62
		performance	6.56	1.68	8.51	1.69	1.95	6.41	29.72
3-	Dribble, pass and receive then feint with body and jump shot	Duration	8.86	1.03	8.01	1.33	0.85	3.68	9.59
		performance	6.64	1.82	8.25	2.21	1.61	6.85	24.25
4-	Dribble, pass and receive the feint with pass, feint with body and jump shot	Duration	9.08	0.85	8.14	1.11	0.94	4.69	10.35
		performance	7.35	1.58	9.36	1.82	2.01	7.54	27.35
5-	Zigzag dribbling, pass, receive, feint with jump shooting, dribble then feint with pass and jump shot	Duration	9.55	1.16	8.89	1.56	0.66	5.74	6.91
		performance	6.61	1.56	8.09	1.88	1.48	6.43	22.39

(t) Table Value on $p=0.05 = 1.68$

The researchers think that this improvement is due to the recommended training program as it has positive effects on all the research variables through active involvement in the training units. This involvement, in turn, led to improvements on feint technical aspects as the players acquired the needed coordinative abilities, leading to enhancements in their coordination of movements in different directions. This is in agreement with related literature in that coordination improves the ability to integrate many movements into one fluent framework and good performance of the motor model needs more coordination in case of more complex moves [20-24].

This is also in agreement with some previous studies in that any training program should improve the performance level. What is of special importance is the percentage of this improvement [1, 4].

CONCLUSION

The researchers concluded that the recommended training program had a positive effect on the post-tests of the experimental group on physical variable, with improvement percentage 1.11% - 15.64%, skills variables (feint duration) with improvement percentage 2.99% - 10.35% and ills variables (feint performance) with improvement percentage 22.39% - 45.59%. the use of training aids (elastic cords) contributed greatly in improving the performance level.

RECOMMENDATIONS

The Researchers Recommend the Following:

- Using the recommended training program to develop complex feints skill for junior handball players.

- Developing more training programs for other complex feint skills.
- Developing training programs for other age groups.
- Using the recommended training program to develop the physical aspects

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