Journal of Physical Education and Sport ® (JPES), Vol.19 (Supplement issue 5), Art 284 pp. 1914 -1919, 2019
online ISSN: 2247 - 806X; p-ISSN: 2247 – 8051; ISSN - L = 2247 - 8051 © JPES

Original Article

Libero role testing in volleyball as monitoring of physic level drills

MARRA FRANCESCA[1], AQUINO MATTEO[2], ALTAVILLA GAETANO[3]
[1,2] Department of "Human, Philosophical and Training Sciences",University of Salerno, ITALY
[3] University of Split, CROATIA

Published online: October 22, 2019
(Accepted for publication: October 15, 2019)
DOI:10.7752/jpes.2019.s5284

Abstract:
Testing is used to measure performance and, therefore, check for improvements resulting from training activities. More and more frequently, coaches require checks even during the current sporting season to measure the status of the athletes' performance and to eventually change their training plans in order to make them more productive. Therefore, more and more often testing has a monitoring function and, for this reason, an adaptation to ordinary training activities is required to allow it. The purpose of this study is to monitor the state of some physical abilities of a 21-year-old volleyball player who plays in the role of libero in B1 series. The method is experimental longitudinal and it consists in detecting the initial and the final data in a period of time of 8 months (racing season duration) for the following skills: articolar mobility and flexibility, moving speed and reaction speed to a stimulus.The tests used are the following: Squat Test; StraightLegRaises Test; AdductorFlexibility Test; Reactivity Test; Rapidity Test. From the results, it comes out that the physical abilities (resulting from the training activities) were optimally monitored. The goal is therefore achieved, because the coach has verified the athlete's performance status and he has specifically noted an improvement. At the end, the study was useful for the purpose but it is necessary to improve the evaluation tools and to adapt them to the training plans.
Key words: enablyphysical abilities, high level women's volleyball, tests, longitudinal case, role of libero, monitoring and evaluation system.

Introduction

The high-level agonistic female volleyball concerns that part of the volleyball which includes all categories of volleyball ranging from A1 to B2 series (D'Isanto et al, 2019).In high-level competitive women's volleyball there is no monitoring system, with the characteristics shown there, concerning training activities and the collection of qualitative and quantitative informations. (Di Tore et al, 2018).Do not forget that a monitoring process can be expected at any age, both on males and females (Parisi&Raiola,2014, Raiola, Di Tore, 2012ab).All types of analysis can be used to support this monitoring system, such as video analysis. (Raiola et al, 2013; Izzo et al, 2018). Video analysis applied to volleyball didactics to improve sports skills. In essence, the evaluation of sports performance is fundamental at every level, in its theoretical aspects and its practical indications (D'Isanto, T., D'Elia, F., Raiola, G., Altavilla, G., 2019). What is proposed in this article is a monitoring system for training activities in the context of high-level competitive women's volleyball. Monitoring means the application of a system which, based on the use of specific and appropriate criteria, aims to control the duration of a training or a whole competitions season in a structured manner and with recurrent step, for the purposes of:

- highlight the trend, starting from elementary variables of the observed phenomenon;
- record the deviations between what is taking place and what was expected;
- inform the players of the monitoring system (recipients, beneficiaries, users, controllers) about the critical issues that arise from time to time to search for the most appropriate solutions.

By monitoring we therefore mean: preparation of an information gathering system:

- coded;
- registered;
- constantlyupdatable.

The monitoring system therefore constitutes the essential support to the evaluation process on the libero-athlete and on the workout methodology used by the coach or coaches (D'Isanto el al. 2017). So thanks to data collected by this monitoring system, we can evaluate our training activities and the athletes in the role of libero. This type of system is being proposed because in the high-level competitive women's volleyball, in particular in the role of the the libero, scientific instruments and simple fruition about the objective monitoring of training actions and their effectiveness are lacking. More and more frequently, coaches require checks even during the current sporting season to measure the state of the athletes' performance and possibly change their training plans in order to make them more effective. Increasingly testing has also a monitoring function and,

Corresponding Author: MARRA FRANCESCA, E-mail: fmarra16@gmail.com

therefore, is expected in the ordinary training activities without changing the annual planning: in fact, testing is used to measure the performance and, therefore, to verify the resulting improvements to training activities. Therefore, to do this, it is necessary to provide a type of functional tests for training.

Material & methods

The method is experimental and longitudinal and it consists in detecting the initial and final data in a period of time of 8 months for some physical skills of a volleyball player in the role of libero in B1 series. To perform these tests, no specific equipment is needed: all you need is a wall, a ruler and a stopwatch.
The main contents which are to be presented:

*Participants:*21-year-old libero-player and 2 volleyball sport technicians.

Procedure: no different heating is required than the usual joint mobility of each training start.

Tests description:

1) Squat Test

Starting from an upright position, with feet shoulder-width apart and arms extended and stretched forward, the subject bends over the legs simulating the squat exercise, taking care to keep the back straight (physiological curves active) and looking forward, until it reaches its point of maximum flexion: that is, where the weight of the body leaning forward causes the heels to lift off the ground.

2) Hamstring Flexibility Test

Lying on the ground in a supine position, making sure that the lumbosacral area remains well adherent to the floor, the subject raises one leg at a time, trying to bring it to himself as close as possible until he feels the need to flex it.

During the execution of this mono-limb test, however, particular attention must be paid to any movements of the pelvis, which could cause false positives or false negatives. In particular:

1. a test performed with an antiverso basin, could make judge ischiocrural retracts actually of normal length;

2. if during the lifting of the leg we are witnessing a retroversion of the pelvis, it is possible to judge ischiocrural in normal length actually retracted.

3) Adductor Flexibility Test

Against a wall, in a supine position but with the lumbar area well adherent to the ground, the subject raises his legs to the wall assuming a squared position and tries to spread them in such a way as to form the widest possible angle. If necessary, for greater stability, stretch the arms perpendicular to the torso.

4) Reactivity Test

A 15 cm ruler is maintained by the coach in a vertical position by squeezing it by the top. The athlete, on the other hand, places the thumb and forefinger at least 2 cm apart at the sides of the ruler near the bottom (therefore more or less at the height of the zero sign). The coach then releases the ruler without warning and the athlete tries to grab it as soon as possible by squeezing the two fingers. Finally, the value that the ruler indicates at the socket is shown.

3 tests are performed.

5) Rapidity Test

Positioned 4 cones, 1 meter apart, like the vertices of a square, the subject starts from the center of the latter - meeting point of the diagonals - also designated by another cone: in the shortest possible time, the subject must move each time from the center to one of the vertices (returning each time to the center) completely passing (both forwards and backwards) with the feet each cone.

3 tests are carried out with recovery time 1'30 ".

Results

Results were collected in the following tables:

Table 1. Squat Test

Squat Test	
Date	Degree
7 November 2018	52°
7 February 2019	72°
7 May 2019	61°

-Test – Squat test (before and after)

	Coupleddifferences							
	Average	StdDeviation	Average standard error	Confidenceinterval of 95% difference lower	Higher	t	gl	Sign. (Two-tailed)
VAR01 - VAR02	-10,00000	1,05409	,33333	-10,75405	-9,24595	-30,000	9	,000

Significance levelp>0.05 – There is a significant difference between the two surveys of Squat test (0.000)

Table 2. Hamstring Flexibility Test

HamstringFlexibility Test		
Date	Degree	
	Dx	Sx
7 November 2018	74°	61°
7 February 2019	69°	55°
7 May 2019	91°	86°

Hamstring Flexibility Tests correlation (Right and left)

		VAR00002	VAR00003
VAR00002	Pearson'scorrelation	1	,999**
	Sign. (Two-tailed)		,000
	N	12	12
VAR00003	Pearson'scorrelation	,999**	1
	Sign. (Two-tailed)	,000	
	N	12	12

The correlation is perfect and positive 0.999

Table 3. Adductor Flexibility Test

AdductorFlexibility Test	
Date	Degree
7 November 2018	126°
7 February 2019	130°
7 May 2019	133°

Table 4. Reactivity Test

Reactivity Test						
Date	Cm			Cent.		
	I try	II try	III try	I try	II try	III try
7/11/2018	5	9	13	10.0	13.50	16.30
7/02/2019	8	6	15	12.70	11.00	17.50
7/05/2019	5	5	6	10.00	10.00	11.00

Reactivity tests correlation (Cm and Cent.)

		VAR00001	VAR00002
VAR00001	Pearson'scorrelation	1	,997**
	Sign. (Two-tailed)		,000
	N	9	9
VAR00002	Pearson'scorrelation	,997**	1
	Sign. (Two-tailed)	,000	
	N	9	9

The correlation is excellent and positive 0.997

Table 5. Rapidity Test

Rapidity Test			
Date	I try	II try	III try
7/11/2018	4" 92	4" 53	4" 39
7/02/2019	6" 30	5" 93	5" 65
7/05/2019	4" 40	4" 25	3" 96

T-Test – Rapidity test (before and after)

	Coupleddifferences							
	Average	StdDeviation	Average standard error	Confidenceinterval of 95% difference lower	Higher	t	gl	Sign. (Two-tailed)
VAR01 - VAR02	,38000	1,46333	,46275	-,66680	1,42680	,821	9	,433

Significance levelp>0.05 – There is no significant difference between the two surveys of Rapidity test (0.433)

Dicussion

With these simple tables we are able to monitor the progressof training activities for an entire season. The surveys were carried out every 3 months. Each of the surveys went to check which physical skills were increased and which not. Tests supported the technical and tactical evaluation as well as the intrinsic motivation of the players to be examined.

Conclusions

Tests have once against shown that constant training is the only winning key! In particular, from the results it turns out that the training activities are constantly monitored and, therefore, the purpose can be considered achieved because the coach has occurred over time the physical and performance level of the athlete, also noting a final performance improvement, confirmed by data collected during the competitions too. In conclusion, the study was useful for the purpose but it is necessary to improve the evaluation tools and adapt them to the training plans. An improvement of this system is envisaged with the addition of tests to monitor many other skills.

Conflicts of interest - If the authors have any conflicts of interest to declare.

References

Federici, A., Zumbo, F., Raiola, G. (2019) Use of chains as a means of intensifying the load in resistance training, Journal of Physical Education and Sport, 19, art. no. 68, pp. 466-472.

Altavilla, G., Raiola, G. (2019) A brief review on physiological commitment in basketball: An interpretative key, Journal of Human Sport and Exercise, 14, pp. S59-S65.

D'Isanto, T., D'Elia, F., Raiola, G., Altavilla, G. (2019) Assessment of sport performance: Theoretical aspects and practical indications, Sport Mont, 17 (1), pp. 79-82.

Altavilla, G., D'Elia, F., Raiola, G. (2018) A breif review of the effects of physical activity in subjects with cardiovascular disease: An interpretative key, Sport Mont, 16 (3), pp. 103-106.

Valentini, M., Bernardini, C., Beretta, A., Raiola, G. (2018) Movement and language development as an early childhood twin strategy: A systematic review, Sport Mont, 16 (3), pp. 107-112.

Altavilla, G., Gaetano, R. (2018) Physiological effects of warm-up and problems related to team sports, Sport Science, 11, pp. 83-88.

Ferrara, F., Di Tore, P.A., Gaetano, R. (2018) Preliminary work on the testing of power glove applied to volleyball, Journal of Physical Education and Sport, 18, art. no. 294, pp. 1986-1990.

Di Tore, A.P., Raiola, G., D'Isanto, T. (2018) Situation awareness in sports science: Beyond the cognitive paradigm [Situacijskasvijest u sportskojnauci: Van kognitivneparadigme] Sport Science, 11 (1), pp. 44-48.

Raiola, G., D'elia, F., Altavilla, G. (2018) Physical activity and sports sciences between European Research Council and academic disciplines in Italy, Journal of Human Sport and Exercise, 13, pp. S283-S295.

D'elia, F., Mazzeo, F., Raiola, G. (2018) The core curriculum in the university training of the teacher of physical education in Italy, Journal of Human Sport and Exercise, 13, pp. S413-S420.

Valentini, M., Riccardi, F., Raiola, G., Federici, A. (2018) Educational research: Motor area and relational area during children's personality development, Journal of Physical Education and Sport, 18, art. no. 327, pp. 2157-2174.

Altavilla, G., D'Isanto, T., Di Tore, A.P., Raiola, G. (2018) Free throw and outcomes: Pilot study on intensive training versus extensive one, Journal of Human Sport and Exercise, 13 (3), pp. 494-503.

Altavilla, G., Riela, L., Di Tore, A.P., Raiola, G. (2017) The physical effort required from professional football players in different playing positions. Journal of Physical Education and Sport, 17 (3), art. no. 200, pp. 2007-2012.

Raiola, G. (2017) Motor learning and teaching method, Journal of Physical Education and Sport, 17, art. no. 236, pp. 2239-2243.

Cassese, F.P., Raiola, G. (2017) The importance of sport in disability management, Sport Science, 10, pp. 7-11.

Raiola, G., Di Tore, P.A. (2017) Motor learning in sports science: Different theoretical frameworks for different teaching methods, Sport Science, 10, pp. 50-56.

D'Isanto, T., Altavilla, G., Raiola, G. (2017) Teaching method in volleyball service: Intensive and extensive tools in cognitive and ecological approach, Journal of Physical Education and Sport, 17, pp. 2222-2227.

Rago, V., Pizzuto, F., Raiola, G. (2017) Relationship between intermittent endurance capacity and match performance according to the playing position in sub-19 professional male football players: Preliminary results, Journal of Physical Education and Sport, 17 (2), pp. 688-691.

Raiola, G., Altavilla, G., De Luca, C., Di Tore, P.A. (2016) Analysis on some aspects of the service in volleyball, Sport Science, 9 (1), pp. 74-77.

Raiola, G., D'isanto, T. (2016) Descriptive shot analysis in basketball, Journal of Human Sport and Exercise, 11 (Proc1), pp. S259-S266.

Raiola, G., D'isanto, T. (2016) Assessment of periodization training in soccer, Journal of Human Sport and Exercise, 11 (Proc1), pp. S267-S278.

di Tore, P.A., Raiola, G., Altavilla, G., Barba, S., Pignato, S., Lipoma, M. (2016) Motor imagery, perspective taking and gender differences: A VVIQ2-based study, Journal of Human Sport and Exercise, 11 (Proc1), pp. S228-S232.

di Tore, P.A., Raiola, G., Altavilla, G., Gervilli, M.G., Pignato, S., Lipoma, M. (2016) Visual motor skills and reading fluency: A correlational study, Journal of Human Sport and Exercise, 11 (Proc1), pp. S233-S238.

Raiola, G. (2015) Inclusion in sport dance and self perception Sport Science, 8, pp. 99-102.

Raiola, G. (2015) Sport skills and mental health, Journal of Human Sport and Exercise, 10 (Specialissue), pp. S369-S376.

Raiola, G. (2015) Basketball feint and non-verbal communication: Empirical framework, Journal of Human Sport and Exercise, 10 (Specialissue1), pp. 360-368.

Altavilla, G., Raiola, G. (2015) Sports game tactic in basketball [Sport Science, 8 (1), pp. 43-46.

Gaetano, R., Paloma, F.G., Gaetano, A. (2015) Anxiety in the youth physical and sport activity, Mediterranean Journal of Social Sciences, 6 (3), pp. 227-230.

Gaetano, R., Domenico, T., Gaetano, A. (2015) Physical activity and its relation to body and ludic expression in childhood, Mediterranean Journal of Social Sciences, 6 (3), pp. 293-296.

Raiola, G., Altavilla, G., Filippo, G.P. (2015) Effects of physical activity and sports in the reduction of stereotypy in blind subjects, Sport Science, 8, pp. 52-55.

Altavilla, G., Furino, F., Di Palmo, M., Raiola, G. (2015) The child hypokinetic and the overtrained, Sport Science, 8, pp. 72-74.

Altavilla, G., Furino, F., Marika, D.P., Raiola, G. (2015) Physical skills, sport learning and socio-affective education, Sport Science, 8, pp. 44-46.

Raiola, G. (2014) Teaching method in young female team of volleyball, Journal of Physical Education and Sport, 14 (1), pp. 74-78.

Raiola, G. (2014) Motor control and learning skills according to cognitive and ecological dynamic approach in a vision on behaviorism, cognitive, Gestalt and phenomenology theories, Mediterranean Journal of Social Sciences, 5 (15), pp. 504-506.

Parisi, F., Raiola, G. (2014) The serve in under 12-13 Italian volleyball team, Journal of Human Sport and Exercise, 9, pp. S588-S591.

Parisi, F., Raiola, G. (2014) Video analysis in youth volleyball team, Journal of Human Sport and Exercise, 9, pp. S584-S587.

Altavilla, G., Raiola, G. (2014) Global vision to understand the game situations in modern basketball, Journal of Physical Education and Sport, 14 (4), art. no. 75, pp. 493-496.

Gaetano, R., Rago, V. (2014) Preliminary study on effects of hiit-high intensity intermittent training in youth soccer players, Journal of Physical Education and Sport, 14 (2), pp. 148-150.

Raiola, G., Parisi, F., Giugno, Y., Di Tore, P.A. (2013) Video analysis applied to volleyball didactics to improve sport skills, Journal of Human Sport and Exercise, 8 (2 SUPPL), pp. 307-313.

Raiola, G., Giugno, Y., Scassillo, I., Di Tore, P.A. (2013) An experimental study on Aerobic Gymnastic: Performance analysis as an effective evaluation for technique and teaching of motor gestures, Journal of Human Sport and Exercise, 8 (2 SUPPL), pp. 297-306.

Raiola, G., Scassillo, I., Parisi, F., Di Tore, P.A. (2013) Motor imagery as a tool to enhance the didactics in physical education and artistic gymnastic, Journal of Human Sport and Exercise, 8 (2 PROC), pp. 93-97.

Polidoro, L., Bianchi, F., Di Tore, P.A., Raiola, G. (2013) Futsal training by videoanalysis, Journal of Human Sport and Exercise, 8 (2), pp. 290-296.

Raiola, G. (2013) Body knowledge and motor skills, Knowledge Cultures, 1 (6), pp. 64-72.

Raiola, G., Di Tore, P.A. (2012) Statistical study on bodily communication skills in volleyball to improve teaching methods, Journal of Human Sport and Exercise, 7 (2), pp. 468-488.

Raiola, G., Di Tore, P.A. (2012) Bodily communication skills and its incidence on female volleyball championship to enhance didactics, Journal of Human Sport and Exercise, 7 (2), pp. 365-375.

Di Tore, P.A., Raiola, G. (2012) Exergame-design and motor activities teaching: An overview of scientific paradigms on motor control, Mediterranean Journal of Social Sciences, 3 (11), pp. 119-122.
Di Tore, P.A., Raiola, G. (2012) Case study on physical education and sport in Naples, Italy, Mediterranean Journal of Social Sciences, 3 (11), pp. 471-476.
Di Tore, P.A., Raiola, G. (2012) Exergames in motor skill learning, Journal of Physical Education and Sport, 12 (3), pp. 358-361.
Di Tore, S., Carlomagno, N., Fillippo, G.P., Macchi, C., Raiola, G., Cecoro, G., Sibilio, M. (2012) Physical education and sport in the Campania region Sport Science, 5 (1), pp. 32-35.
Gaetano, R. (2012) Motor learning and didactics into physical education and sport documents in middle school-first cycle of education in Italy, Journal of Physical Education and Sport, 12 (2), pp. 157-163.
Raiola, G., Di Tore, A. (2012) Non-verbal communication and volleyball: A new way to approach the phenomenon, Mediterranean Journal of Social Sciences, 3 (2), pp. 347-356.
Gaetano, R. (2012) Didactics of volleyball into the educate program for coaches/trainers/technicians of Italian Federation of Volleyball (FIPAV), Journal of Physical Education and Sport, 12 (1), pp. 25-29.
Raiola, G. (2012) Bodily communication in volleyball between human and experimental sciences, Mediterranean Journal of Social Sciences, 3 (1), pp. 587-597.
Ambretti, A., Raiola, G., Sibilio, M. (2011) Motor coordination in the Italian primary school: Teaching relevance and availability of Anochin's theoretical model, Sport Science, 4 (2), pp. 12-16.
Raiola, G. (2011) A study on Italian primary school rules: Neurophysiological and didactics aspects on physical education and sport, Journal of Physical Education and Sport, 11 (2), pp. 43-48.
Raiola, G. (2011) Study between neurophysiological aspects and regulation documents on preschool in Italy, Journal of Physical Education and Sport, 11 (1), pp. 42-47.
Carlomagno, N., Di Tore, S., Aiello, P., Raiola, G., Prosperi, R., Macchi, C.,The assessment-prediction capacities of teachers during physical activities in the primary school in Italy: Analysis of the relationship between expected energy expenditure and actual energy expenditure during a light physical activity lasting 15 minutes (2010) Sport Science, 3 (2), pp. 7-10.
D'elia, F., D'isanto, T., Altavilla, G. (2019) Training and performance in the transition period, Journal of Human Sport and Exercise, 14 (Proc2), pp. S258-S262.
Forte, D., Ceciliani, A., Izzo, R., Altavilla, G. (2019) Transition period: Pilot study on performance reduction of ability to jump in volleyball, Journal of Human Sport and Exercise, 14 (Proc2), pp. S221-S227.
Alminni, C., Altavilla, G., Cassese, F.P., Ceciliani, A., D'isanto, T. (2019) Physical and motor tests to estimate the improvement of the float serve, Journal of Human Sport and Exercise, 14 (Proc2), pp. S245-S250.
Sanseviero, I., Cassese, F.P., Fonzo, E., Altavilla, G., D'elia, F. (2019) Study on the master's degree in sciences of sports evaluation and sport for disabled at the University of Salerno, Italy
Journal of Human Sport and Exercise, 14 (Proc2), pp. S239-S244.
Forte, D., Altavilla, G. (2018) Preliminary correlation between anthropometric and performance data in volleyball about the transition period, Journal of Physical Education and Sport, 18, art. no. 296, pp. 1994-1998.
Tore, A.D., Altavilla, G., D'Isanto, T. (2018) Situation awareness in sports science: Beyond the cognitive paradigm, Sport Science, 11 (1), pp. 25-28.
Altavilla, G., D'isanto, T., Di Tore, P.A. (2018) Anthropometrics characteristics and jumping ability in basketball, Journal of Human Sport and Exercise, 13, pp. S385-S392.
D'isanto, T., Di Tore, P.A., Altavilla, G. (2018) Correlation of the anthropometric characteristics and the ability to jump in volleyball, Journal of Human Sport and Exercise, 13, pp. S393-S400.
Tiziana, D., Antonetta, M., Gaetano, A. (2017) Health and physical activity, Sport Science, 10 (1), pp. 100-105.
Altavilla, G., Di Tore, P.A., Riela, L., D'Isanto, T. (2017) Anthropometric, physiological and performance aspects that differentiate male athletes from females and practical consequences, Journal of Physical Education and Sport, 17, art. no. 226, pp. 2183-2187.
Gaetano, A. (2016) Relationship between physical inactivity and effects on individual health status, Journal of Physical Education and Sport, 16, pp. 1069-1074.
Cirillo, G., Nughes, E., Acanfora, A., Altavilla, G., D'Isanto, T. (2016) Physical and sport education testing by quantitative and qualitative tools in assessment in senior school: A proposal, Sport Science, 9, pp. 97-101.
Altavilla, G., Di Tore, P.A. (2016) Physical education during the first school cycle: A brief social psycho-pedagogical summary, Journal of Physical Education and Sport, 16 (2), art. no. 55, pp. 340-344.
Altavilla, G. (2014) Effects of the practice of muscle stretching, Sport Science, 7 (1), pp. 66-67.
Perrotta, F., Altavilla, G. (2013) The 'autism in school age: Early diagnosis for treatment Sport Science, 6 (2), pp. 49-53.
Altavilla, G., Manna, A., Perrotta, F. (2013) A possible value in terms of education with action inclusive, Journal of Physical Education and Sport, 13 (3), pp. 371-374.