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Original article

EFFECT OF BULGARIAN BAG EXERCISES ON CERTAIN PHYSICAL VARIABLES AND PERFORMANCE LEVEL OF PIVOT PLAYERS IN BASKETBALL

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Abstract*

Aim. Bulgarian bag was originally designed for professional athletes to train muscular endurance, explosive strength and the ability to make strength training more versatile, efficient and interesting.A real breakthrough in functional training allows in one exercise to work out a much larger number of muscles develops not only strength, but also still dexterity and flexibility. Ideal for power, functional, aerobic, Cross Fit workouts. The purpose of this study was to investigate the effect of Bulgarian bag exercises on certain physical variables and performance level of pivot players in Basketball.

Methods. The study sample was selected from Al –korin club in Kuwait state. The sample consisted of (10) pivot players. The experimental group practices the Bulgarian bag exercises program for eight weeks, four times weekly. The researcher conducted homogeneity in age, height, weight, and training experience.

Results. Statistical analyses showed that:

- Statistically significant differences between the pretests and posttests for the experimental group in Vertical jump test (Sargent jump), Test of throwing the medicine ball, Chin Up Test, 20m- 40 m Sprint and Performance level of Pivot footwork and Hook Shot.

Conclusions. Eight weeks from Bulgarian bag exercises could affected on Vertical jump test (Sargent jump), Test of throwing the medicine ball, Chin Up Test, 20m- 40 m Sprint and Performance level of Pivot footwork and Hook Shot for pivot players in Basketball. These results have to be taken into account by instructors in order to better understand and implicated of these concepts for technical effects of training.

Keywords: Bulgarian bag, Hook Shot, Pivot, Basketball.

Introduction

Basketball is sports game aimed to put a ball into the basket of the opposing team. To move the ball from one place to another, players can drop it with one hand or pass it between them. The team that manages to hit the ball more often in the opposing basket wins.

In Basketball, as in any team sport, numerous factors that influence performance optimum. Contrary to what might be thought, the aspects anthropometric, technical-tactical and physical do not seem to be so decisive in the game. (Pliauga, et al., 2015)

In Basketball, technical and tactical preparation of the different equipment is very similar. There are other variables that have a great impact on the results of the teams of Basketball, such as the degree of socio-affective interaction between the components of the sports group (players, team technicians, and managers), socio-economic support, as well as psychological profile of coaches and players. Coaches with a lot of experience we have been saying that the ties that are established between the components of the equipment have a clear demonstration on the pitch: what happens in the court seems to be a faithful reflection of the communication between the group members. (Ackland, et al., 1997)

As an example the championship of Europe 2005, held in Serbia, where the host team,full of stars, failed to win the tournament, in the opinion of his coach the main cause was the lack of group cohesion, since in the Serbian players the individuality versus the pursuit of a group goal . (Erčuljet al., 2008)

In short, Basketball performance must be understood as an interaction of numerous factors in which it has special group cohesion (psychosocial factor) and the degree of technical-tactical coupling of the equipment. With that, we want to make it clear that fitness is a factor more within a complex network, not the most important but necessary for

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sports performance. (Galazoulas, et al., 2012)

The force during the execution of the actions applied in a dynamic, explosive and repeated way.

Strength and power for legs determine how explosive actions are performed in Basketball. The jumps to go to the rebound, the jumps for the launches, speed of change direction, the ability to decelerate and brake,with the work of force. The strength of arms and the shoulder girdle is important in the control of rebounds, the maximum force is in maintaining the position under basket or in low post. (Miller, 2003)

At present, in the training of highly qualified athletes there is a clear tendency to use non-traditional means and methods in sports training. Sports specialists, coaches and athletes are constantly in the search for new and effective sports technical equipment, simulators, sports inventory. (Dave, 2003)

Ideally, the equipment should be universal, functional, effective and durable. All these criteria correspond to the "Bulgarian bag" - an easy-to-use sports equipment, which used when performing power, plyometric and aerobic exercises, developing power quality, increasing explosive strength, strengthening joints and ligaments, as well as cardiovascular system. (Gehan, 2010)

The Bulgarian bag invented by Ivan Ivanov around 2005. Ivanov is a former wrestler of the Bulgarian Olympic team in the Greco-Roman wrestling. Working now as the coach of the US Olympic team for Greco-Roman wrestling, he was looking for a training shell that would allow his fighters to improve the explosive power of dynamic movements. (Sava Sport, 2015)

Ivanov was inspired by the tradition of shepherds performing strength exercises with sheep and goats at street fairs in their native Bulgaria. Shepherds were often forced to carry lambs and weak sheep on their shoulders when they grazed their flocks and then demonstrated their strength at the fairs. Ivanov used the shape of the sheep's body on his shoulders in the design of his bag - he gave a modern interpretation of the old tradition.(Suples Training Systems, 2015)

Bulgarian bag was originally designed for professional athletes to train muscular endurance, explosive strength and the ability to make strength training more versatile, efficient and interesting.

A real breakthrough in functional training allows in one exercise to work out a much larger number of muscles develops not only strength, but also still dexterity and flexibility.Ideal for power, functional, aerobic, Cross Fit workouts.(Bobu, et al., 2015)

Exercises with the "Bulgarian bag "are more physical than with dumbbells, weights, bars. The sand in the bag does not have a constant structure; therefore, when training with the bag, it is necessary to use more force, energy, muscle groups and physical reserves of the body than when training with "iron" of the same weight. "Bulgarian bag" can be used as an aggravation for dynamic exercises: rotation, twisting, jumping, squats, push-ups, pull-ups. This greatly diversifies the training and improves its effectiveness.

Shooting is the most important technique of Basketball. The techniques pass, dribble, defend and rebound can opportunities to launch, but in any case, it will be necessary to do so with correction and effectiveness.(Erčulj et al., 2008)

A good shooter forces his defender to keep a close eye on him,vulnerable to a feint, penetration, etc. When he does not have, the ballallows your defender to help another player.Trust, mental play and speed in shooting are very important.

Jumping is a critical skill in Basketball, power in the legs is fundamental, because many jumps are made in the course of a game. Due to the characteristics of this sport, the players to face this physical requirement (Miller, 2003).

"Pivot": the players of greater height and the stronger ones muscularly. Normally, the pivot must use its height and its power playing near the ring. A pivot that combines strength with agility is apiece fundamental for the team. They are the players that most surprise the amateurs, because of its high altitude. In Europe, the average center has evolved more and is able to open outwards to pull. In Defense seek to collect the short rebound, prevent the inside play of the opposing team and clog entries from outside players.

Before designing the physical preparation program of a Basketball team, it is necessary to know in detail what happens on the court play, what technical-tactical actions predominate, what times of participation are given and with what intensity? What times there is rest, the types of contraction that predominate? What are the lactate concentrations and the distances traveled? As a whole, all these data offer information essential to know the contents of the training and to program the fitness of the Basketball player.

The Pivot is the most important player on the basket because he plays in the area near the ring. The players are always the focus of the coaches and spectators. Is to instill confidence in the player and

mentally prepare him for the importance of his role among the members of the team, and to raise pride in himself for being tall.(Sáenz López, et al., 2005)

In addition, we see that this player with its characteristics is difficult for the defender to predict the movement he intends to do in terms of his tendency to turn and scoring of jumping or cutting or handling or a hook or a hook or deceive. All this and is considered the player most players focus on the team of defenders competitors where we find occupies the largest possible area near the basket. so as to extend the body and spacing the feet while keeping the body standing high at all times, as well as we always take the appropriate conditions to receive the passes of colleagues and the individual body and arms to receive high passes. And always see the shoulders in a free position to allow him to use the back of the back (the bench) to keep the opponent away from the ball, and we find it always works to increase the chances of receiving the passes is deceiving and move to the opposite direction of the place. where the ball and then change the direction and move For the receipt and works throughout the time to keep the defender behind his back and sometimes find him on the far side and then cut to receive the start time of the ball. Moreover, good to use the back of the booking when he is near the basket but he prefers booking outside the area, and always fined his eye on the ball even in the case of moving away from it.

With the presence of a lieutenant defender, he accompanies him away from the site where he wishes to receive in preparation for camouflage and then return to receive the ball. In addition to the basic skills he has, the team depends on him for the most effective skills (free throw, hooking, and defense skills).

In this regard, (Bobu, et al., 2015) indicated to lack of studies that conducted in the field of sports to identify the effectiveness Bulgarian bags on the functions of the body, compared to the availability of many studies conducted on the kettlebell. Although,it is being effective in the development of strength and capacity and improve the respiratory system.

Based on above, this article aimed to explore the effect of Bulgarian bag exercises on certain physical variables and performance level of pivot players in Basketball

Method

The study sample was selected from Al –korin club in Kuwait state. The sample consisted of (10) pivot players. The experimental group practices the Bulgarian bag exercises program for eight weeks, four times weekly. The researcher conducted homogeneity in age, height, weight, and training experience. Table (1) shows that.

The physical tests

Vertical jump test (Sargent jump)

The subject approach a wall, you stand erect, raise an arm and "something" (typically a chalk), and the player make a mark on the wall.

The subject crouch slightly (typically up to 90 degrees with your knees) and jump as high as you can by making a new mark on the wall at the highest possible height.

The difference between that mark and the initial mark indicates how much you jumped.

Repeat the jump another two times and do the average of the three measurements and that is it, you know how much "vouchers" in the Vertical Test Jump.

Test of throwing the medicine ball

The subject try to throwing the medicine ball as far as it can from a static position. That is, feet together and launch without a race.

The starting position for starting the throwing test is to stand behind the throw line, horizontally equal feet (ie, the same two, not one more flared than the other) and may be separated. It would be advisable to have the feet shoulder width for a more comfortable and effective release.The ball will be caught with both hands and behind the head at the time of throwing

Chin Up Test

The subject raises his body until the chin clears the top of the bar, then lowers again to a position with the arms fully extended. The test in 10 seconds.

- The grip of the bar should be supine.
- The chin should pass the bar without it encountering it.
- Cannot balance. It is the most frequent mistake that is made.
- The legs should be stretched.
- We must be in the same position for a certain time.

20m-40 m Sprint

The subject must perform a maximum sprint of 40 m in length, linearly, on a flat and unobstructed terrain. The exit will be in standing position. The timekeepers should be located at 20 and 40 m respectively, recording the time just when the athlete's trunk crosses the line that demarcates such distances.

The application of this test then allows an appreciation of both the starting speed and the maximum speed.

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Skill test

Performance level of Pivot footwork and Hook Shot

Simultaneously the following movements are performed:

1. Footwork in all sides (front step – back step – wright step and left step)
2. Vertical jump.
3. Raising the ball.
4. Turn the body in the direction of release.

- Vertical jump

The jump is vertical and the push is made on the opposite leg to the hand of the throw, the position is of backs to the basket.

- Rise of the ball.

The ball is raised close to the body with the arms flexed and the shooting hand under the ball with the fingers facing forward. It is raised above the head, caught with both hands.

- Launching

The launching is done by a circular movement of the arm while helping with the rotation of the body. The opposing arm separates from the balloon to protect it and remains flexed. After the throw, the feet and the body must finish directed in the direction of the shot.

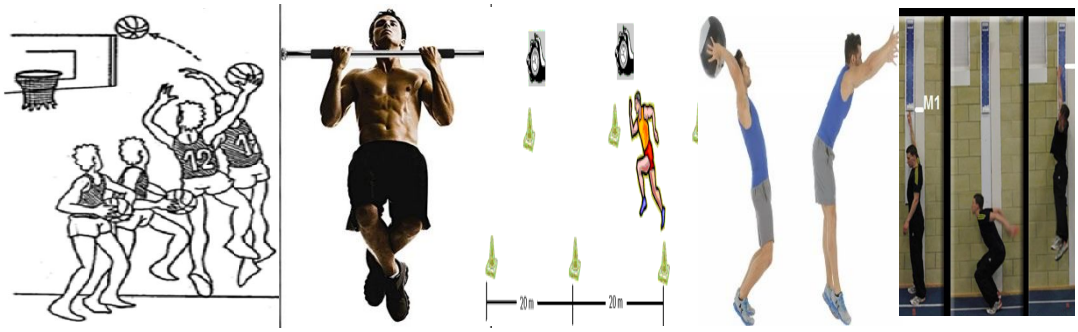

Fig 1 explain the physical & skill tests

Statistical Data Analysis

Differences in Vertical jump test (Sargent jump), Test of throwing the medicine ball, Chin Up Test ,20m- 40 m Sprint and Performance level of Pivot footwork and Hook Shot between the two measurements (pretests-posttests) were compared using a paired t-test. The level of significance was set at $p < 0.05$, and all data are reported as mean ± SD.

Results

Table 1. Shown the age, Anthropometric Characteristics and Training experience for the experimental Group (Mean ± SD)

Group	N	Age [years]	Weight [kg]	Height [cm]	Training experience
Experimental	10	20.67 ± 1.9	92 ± 7.32	198 ± 8.79	7.56 ± 2.56

Table 1 shown the age, Anthropometric Characteristics and Training experience of the subjects. There no significant differences were observed in the characteristics for the subjects in the experimental Group.

Table 2. Shown Mean ± SD, change Rate, and "T" sign between Pretests and Posttests for experimental group in Vertical jump test (Sargent jump), Test of throwing the medicine ball, Chin Up Test , 20m- 40 m Sprint and Performance level of Pivot footwork and Hook Shot.

Variables	Pretests		Posttests		Rate %	T
	M	SD	M	SD		sign
Sargent jump	75.84	0.43	77.57	1.45	2.28	Sign
Test of throwing the medicine ball	8.56	0.41	8.78	0.21	2.57	Sign
Chin Up Test	10.21	0.08	12.43	0.15	21.74	Sign
20m Sprint	4.53	0.14	4.31	0.15	4.86	Sign
40 m Sprint	6.71	0.12	6.52	1.16	2.83	Sign
Performance level of Pivot	6.24	1.17	7.37	1.49	18.11	Sign

Significant differences, p< 0. 05

It is clear from Table (2) that a statistically significant differences between the pretests and posttests for the experimental group in Vertical jump test (Sargent jump), Test of throwing the medicine ball, Chin Up Test , 20m-40 m Sprint and Performance level of Pivot footwork and Hook Shot .

Discussion

The researcher considers that the relationship between the basic skills of Basketball sport and its different physical requirements (general, special) is a close relationship that must be taken into account in the preparation of the players, and that there is no separation between the physical and physical preparations. With skill requirements, it is successful in the training process and thus the level of the players. When the player possesses the physical qualities of a high degree that can perform all skills well.

The physical component is one of the pillars of training that depends on the development of the player and is an important basis that combines with the motor skills in the physical formation of the player.

Therefore, the physical components are one of the most important requirements of performance in Basketball. which may be the decisive factor in winning matches, especially when the level or convergence of skill level of competitors, because the level of physical condition of the players is one of the important reasons that contribute to the achievement of many victories. The fitness of the players enables them to perform a successful sports season.

In this regard, (Dave, 2003) emphasizes that one of the most important features of the Bulgarian bag exercise is the focus on the center, where the center's strong muscles connect the lower end to the upper end, as well as multi- Making it one of the best exercises used to improve muscle capacity.

For improved muscle capacity, (Adams, et al., 1992) suggests that rubber reflex activity allows excellent transfer of muscular capacity to the same biomechanically similar movements that require high trunk and leg ability and results when performing a vertical jump

It is a crescent shaped bag, the filler of which is usually sand serves. It believed that exercises with the "Bulgarian bag" are more physical than exercise with other weighting agents, because the structure of sand is unstable, so training with it involves more muscle and ligament groups, requires more effort, greater energy, which is an advantage over conventional sports shells of the same weight.

The Bulgarian bag is a very effective sports projectile, which has the shape of a half moon, is used in power, aerobic training in sports and fitness. (Sava Sport. 2015)

Training with the Bulgarian bag develops explosive strength, muscular endurance, and strength of grip, coordination and balance, mobility of the joints; strengthen wrists, brushes, shoulders, back, legs.

One of the main advantages of the Bulgarian bag is that the movements and loads during training with it are natural, functional, simulating the real movements of athletes, especially athletes with high level.

Due to the specific design, the Bulgarian bag is more intended for circular and rotational movements, less frequent tossing and jerking - just those exercises that the Basketball players so much need. (Vairavasundaram, Palanisamy, 2015)

Classes with a Bulgarian bag train explosive strength, muscular endurance and coordination, cardiovascular system. The special arrangement of the handles on the bag, the lack of a constant shape (stiffness) of the projectile, the ability to adjust the weight - allow you to perform a huge number of different exercises, work out all muscle groups, use different types of load.

According to (Pliauga, et al., 2015), the training with high loads of maximum and sub maximal type in subject is young and little trained improves the height of the jump.

(Christine, 2000) noted that the ability to raise and accelerate the body and is useful for athletes or activities that require total involvement of the body, such as running, jumping, swimming, characteristics present in the practice of our discipline in question, fundamental for improving sports performance.

This is in line with Marwan Ali's (2003) conclusion that skill training alone is not sufficient to improve this skill and achieve fruitful results. In addition to skill development, it is necessary to develop the motor abilities of the skill itself.(Bobu, et al., 2015)

The results of the study are consistent with the study of (Gehan, 2010; Vairavasundaram, Palanisamy, 2015; Bobu, et al., 2015) that Bulgarian bag training contributes to improved muscle capacity and skill level.

Conclusions

Eight weeks from Bulgarian bag exercises could affected on Vertical jump test (Sargent jump), Test of throwing the medicine ball, Chin Up Test, 20m- 40 m Sprint and Performance level of Pivot

footwork and Hook Shot for pivot players in Basketball. These results have to be taken into account by instructors in order to better understand and implicated of these concepts for technical effects of training.

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