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EFFECTS OF PILATES TRAINING ON PERFORMANCE AMONG THE COLLEGIATE BASKET BALL PLAYERS

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ABSTRACT

Backgroud: Basketball is a complex sport that involves coordinated joint movements which includes a team activity as well as a series of skills of the players. The most common movements in basketball are sprinting, pivoting and jumping which involves the trunk and lower extremities. Pilates exercises focus on whole body conditioning which is commonly used as the training method for fitness and other strength training. The Pilates training thus improves the muscle strength and focusing on postural symmetry with controlled movements. **Aim of the study:** The primary aim of the study is to identify the effects of Pilates training and resistance exercises on performance among collegiate basketball players. **Methodology:** The study included 30 players and the sample were drawn by convenient sampling method. The sample were taken from school of physiotherapy, VISTAS, Thalambur. The study consists of one group in which 30 participants were given exercise program. The Pilates training was given for around 4 weeks duration and along with that the resistance exercises given to the lower limb muscles using theraband. **Results:** The results of the present study showed significant difference between the pre-test and post-test of the sit and reach test and 20 m yard test after Pilates training and theraband strengthening exercises to improve performance among the collegiate basketball players. **Conclusion:** The study concluded that Pilates training and theraband strengthening program improves the performance among the collegiate basketball players.

KEYWORDS: Pilates, Theraband strengthening program, Sit and reach, 20m yard test, collegiate basketball players.

INTRODUCTION

Basketball is a dynamic game which involves complex and coordinated multi joint movements. It is a team activity where you incorporate the series of skills in various situations during the game. The players during the game need to implement multi factorial variables such as offending action and defending activity among the players which needs a great offensive and defensive tactics. Basketball is sport which needs the quickness, speed activity and active vertical jumps. Basketball game possess various types of dynamic activities which involves the rebound, dribble, blocks and jump shots. The main movements in basketball are sprinting, pivoting, and jumping which involves the trunk and lower extremities. The basketball players needs a lot of muscle strength for their better performance in the game. But the level of training and practice sessions vary between the competitive and collegiate players. So the performance of each player has to be analyzed and better training methods has to be implemented even though the players are at college levels or competitive players.

The performance related measurements like vertical jump, running speed, endurance and agility can be determined to identify the efficiency of the players. The strength and flexibility of the lower limb muscle groups are essential for the better change of direction and quicker postural movements around the court.

Pilates exercises focus on whole body conditioning which is commonly used as the training method for fitness and other strength training. Pilates works on the principle of trunk stability which was also depicted as core stability. The exercises in Pilates includes a combination of stretching as well as strengthening exercises with proper trunk control on breathing. With this training methods the players will have improvement on muscle strength, balance, coordination and flexibility. Pilates training works on six principles which are centering, concentration, control, precision, flow and breathing.

The Pilates training thus improves the muscle strength and focusing on postural symmetry with controlled movements. These exercises aims at increasing the strength and endurance to the deepest muscles by repeating the complete set of movements which forms the natural coordination among the various muscle groups.

The resistance training can be given using theraband which is a common and cheaper method of training and easily available. The theraband works in such a way that increasing strength is achieved by increasing the tension in the band by stretching it which provides greater resistance as it is further elongated. Also these bands have a capacity of returning back to the original size which helps in decreasing the resistance load. The purpose of the study is to identify the effectiveness of Pilates exercise training along with theraband exercises on performance rate among the collegiate basketball players.

METHODOLOGY

The study was an experimental design which included 30 male basketball players from School of Physiotherapy, Vels institute of science technology and advanced studies. All the players were educated about the research work and informed consent obtained from each player. The players were selected based on the convenient sampling method and among the players in the college 30 samples who met the inclusion criteria were taken for the study. The participants were given instructions about the study and its benefits. The training program was done under the supervision of the therapist. The outcome measures used were 20 m yard test and sit and reach test. The pre-intervention and post-intervention measures were taken from the players.

Pilates training

The participants were given Pilates training for 4 weeks duration with 2 sessions per week. The Pilates training given were plank, side plank, reverse plank, rolling like a ball, articulating bridge and hundreds.

Therab and Strengthening

The theraband is used for lower limb muscle strengthening and this was repeated 2 sessions per week for 4 weeks duration. Along with theraband few flexibility training were also given to the players.

Data analysis

The obtained data from 30 samples with 2 outcome measures were calculated using the independent‘t’ test. The test values have been tabulated in the table.

Table 01

	Pre test mean	Post test mean	Pre test SD	Post test SD	‘t’ value	‘p’ value
Sit & Reach test	61.43	68.47	2.763	2.763	-22.506	0.000
20 m Yard test	6.9053	5.83	0.27095	0.379	12.800	0.000

‘p’ value <0.001

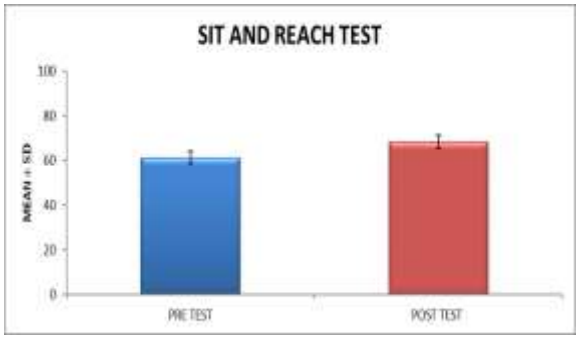

Figure 01

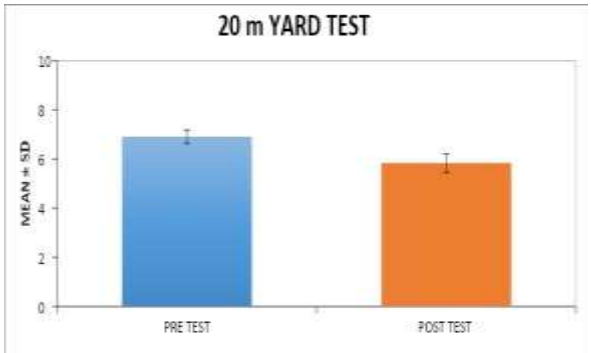

Figure 02

RESULTS

The results of the present study was measured in pre and post type and the values are documented. The mean and standard deviation for sit and reach test were 61.43 and 68.47, 2.763 and 2.763. The mean and standard deviation for 20 m yard test were 6.9053 and 5.83, 0.27095 and 0.379. The‘t’ and ‘p’ value of the sit and reach test were -22.506 and 0.000. The‘t’ and ‘p’ value of the 20 m yard test were 12.800 and 0.000 with ‘p’ value <0.001. There is a significant difference between the pre-test and post-test of the sit and reach test and 20 m yard test after Pilates training and theraband strengthening exercises.

DISCUSSION

The study included 30 collegiate basketball players in which their performance rate was calculated using sit and reach test and 20 m yard shuttle test. Here Pilates exercises and theraband strengthening exercises have been implemented as intervention for improving the performance. The Anis Chaouachi et al in his previous research identified the effectiveness of squat exercises should be a major component of lower limb strengthening in improving the performance. He identified it as one of the determinant in elite basketball players.

Ticiane Marcondes et al in his study aimed to find whether the Pilates training does any physical fitness changes among the young basketball players. Bertola et al evaluated the effects of 4 week Pilates mat work training program have improved the flexibility with sit and reach test as an outcome measure.

Pilates which is given to the players in this study includes stretching the lower extremity muscles and strengthening the same. Also the elastic resistance exercises increases the lower limb strength. Pilates method of exercises is a body-mind conditioning program which includes the core stability exercises with mind and breath control challenging by enhancing movement of the whole body.

Pilates exercises are successful in promoting general health, fitness, rehabilitation and athletic training. There is more amount of force generation among the core muscles during Pilates training in which stability is provided. There is enhanced control over the lumbopelvic hip complex where the proximal trunk muscles transfer the force through the distal trunk muscles. This in turn activate the lower extremity muscles resulting in extremity movement. Resistance training through theraband enhances the function of the nervous system mechanism which is exerted from the spinal level. This improves the co-activation of the

agonist muscle groups compared to the antagonist muscles. The facilitation processes increases the firing of motor units and the increased motor unit recruitment thereby enhancing the large fast-twitch muscle activity improving the overall strength of the lower limb muscles. The study has few limitations like it has included only 30 participants and male collegiate players were only taken. Future research can focus on large population with more number of collegiate basket players.

Thus the present study with respect to the previous works included the Pilates training program and theraband strengthening program among the college going basketball players to improve the flexibility and lower limb strength thereby enhancing the performance of the participants.

CONCLUSION

The present study concluded that Pilates training and theraband strengthening program improves the performance among the collegiate basketball players.

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