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INFLUENCE OF BALLISTIC TRAINING ON VERTICAL JUMP BY THE COLLEGE MALE BASKETBALL PLAYERS

Dr. V. VIJAY ANAND
Assistant Professor,
Physical Education and Health Education and Sports,
A.V.V.M Sri Pushpam College (Autonomous), Poondi, Thanjavur
Vijay.Anand147@gmail.com

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Abstract

The purpose of the present study was to investigate the impact of ballistic training on vertical jump performance in college male basketball players. To achieve the purpose of the study, thirty male basketball players were selected at random to study. All the subjects were students of Avvm Sri Pushpam Arts and Science College (Autonomous), Poondi, Tanjavur, Tamil Nadu, India. The age of the subjects ranged between 18 and 23 years. The selected players were divided into two equal groups, consisting of 15 male basketball players. The ballistic training group (group I) and the control group (group II) underwent their respective training programs for three days per week for twelve weeks; they did not undergo any special training programs apart from their regular physical education curriculum. The control group did not go for any training. All the subjects were tested prior to and after the experimental treatment periods on selected vertical jumps, which were taken as criterion variables in this study. The following variables, such as vertical jump, were selected as criterion variables: A vertical jump was assessed by a wall- mounted vertical jump test. All the subjects in the two groups were tested on selected criterion variables prior to and immediately after the training program, as pre- and post-tests were taken before the training period and post-tests were measured immediately after the twelve-week training period. The statistical technique't' ratio

was used to analyze the means of the pre-test and post-test data of the experimental group and control group. The results revealed that there was a significant difference in the criterion variable. The difference is due to the Ballistic Training given to the experimental group on vertical jump when compared to the control group.

Keywords: Ballistic Training, vertical jump and‘t’ ratio.

INTRODUCTION

In the realm of college basketball, the pursuit of enhanced athletic performance is a constant endeavor. Coaches and players alike are always seeking innovative methods to boost their skills on the court. One such method that has gained traction in recent years is ballistic training. This specialized form of training focuses on explosive movements to improve power and performance. Specifically, many college male basketball players have turned to ballistic training to enhance their vertical jump ability, a crucial skill in the game of basketball.

Ballistic Training

Ballistic training is rooted in the concept of explosiveness. It involves rapid, high- force movements that engage the fast-twitch muscle fibers in the body. By performing exercises such as jump squats, power cleans, and medicine ball throws with maximal speed and effort, athletes can develop greater power output. This newfound power translates directly to improved performance on the basketball court, particularly in areas like vertical jumping.

Vertical Jump Performance

The ability to jump high is a fundamental skill for basketball players, allowing them to both score points and defend against opponents effectively. Through consistent ballistic training, college male basketball players can experience significant enhancements in their vertical jump height. By targeting the explosive strength needed for quick and powerful jumps, athletes can elevate their performance to new heights, quite literally.

Scientific Backing

Research studies have delved into the impact of ballistic training on vertical jump performance in athletes. These studies have consistently shown positive results, with participants displaying notable improvements in jump height and power output after engaging in ballistic training regimens. The science behind this training method aligns with the principles of biomechanics and muscle physiology, making it a credible and effective approach for enhancing athletic performance.

For college male basketball players looking to up their game, integrating ballistic training into their workout routines can be a game-changer. By incorporating explosive exercises that mimic the demands of the sport, players can strengthen the specific muscle groups involved in vertical jumping. Over time, this targeted training can lead to measurable

improvements in jump height and overall performance on the court.

METHODOLOGY

In this chapter deals with the procedures followed in the selection of the subjects, experimental design, selection of variables, selection of tests, instrument reliability, reliability of the data, pilot study, competence of the tester, orientation to the subjects, training program, collection of data, test administration, experimental design, and statistical procedure.

SELECTION OF SUBJECTS

To achieve this purpose of the present study was to investigate the impact of ballistic training on vertical jump performance in college male basketball players. To achieve the purpose of the study, thirty male basketball players were selected at random to study. All the subjects were students of Avvm Sri Pushpam Arts and Science College (Autonomous), Poondi, Tanjavur, Tamil Nadu, India. The age of the subjects ranged between 18 and 23 years. The selected players were divided into two equal groups, consisting of 15 male basketball players. The ballistic training group (group I) and the control group (group II) underwent their respective training programs for three days per week for twelve weeks; they did not undergo any special training programs apart from their regular physical education curriculum. The control group did not go for any training. All the subjects were tested prior toand after the experimental treatment periods on selected vertical jumps, which were taken as criterion variables in this study. The following variables, such as vertical jump, were selected as criterion variables: A vertical jump was assessed by a wall-mounted vertical jump test. All the subjects in the two groups were tested on selected criterion variables prior to and immediately after the training program, as pre- and post-tests were taken before the training period and post-tests were measured immediately after the twelve-week training period. The‘t’ test was used to analysis the significant differences, if any, in between the groups respectively. The 0.05 level of confidence was fixed to test the level of significance which was considered as an appropriate.

TRAINING PROGRAMME

During the training period, there were two groups of subjects: experimental group I ballistic training group and control group II without training. The experimental groups were given training programs, whereas the control group was given training programs without any training. The training procedure was conducted for three days per week for twelve weeks in addition to their regular physical education activities. Every day's workout lasted about 45–60 minutes, including warm-up and warm-down exercises. Group II acted as a control group and did not participate in any specific training; however, they participated in a regular physical

education program. Thus, the training program was conducted with the following: Dependant Variables Parameters for physical fitness variables were selected, such as vertical jump.

ANALYSIS OF THE DATA

The significance of the difference among the means of the experimental group was found out by pre-test. The data were analysed and dependent‘t’ test was used with 0.05 levels as confidence.

Table 1:

ANALYSIS OF T-RATIO FOR THE PRE AND POSTTESTS OF EXPERIMENTAL AND CONTROL GROUP ON VERTICAL JUMP

Variables	Group	Mean		SD		SD Error		D f	‘t’ ratio
		Pre	Post	Pre	Post	Pre	Post		
Vertical jump	Control	42.05	41.90	0.63	0.77	0.16	0.19	14	0.66
	Experimental	41.95	43.89	0.75	0.86	0.19	0.22		7.17*

Significance at.05 level of confidence.

Table I reveal that the mean values of the pre-test and post-test of the control group on vertical jump were 42.05 and 41.90, respectively. The obtained ‘t’ ratio was 0.66, and since the obtained ‘t’ ratio was less than the required table value of 2.14 for the significant at 0.05 level with 14 degrees of freedom, it was found to be statistically insignificant. The mean values of the pre-test and post-test of the experimental group on vertical jump were 41.95 and43.89, respectively. The obtained ‘t’ ratio was 7.17*. Since the obtained ‘t’ ratio was greater than the required table value of 2.14 for significance at the 0.05 level with 14 degrees of freedom, it was found to be statistically significant. The result of the study showed that there was a significant difference between the control group and the experimental group in vertical jump. It may be concluded from the result of the study that the experimental group improved in vertical jumps due to twelve weeks of ballistic training.

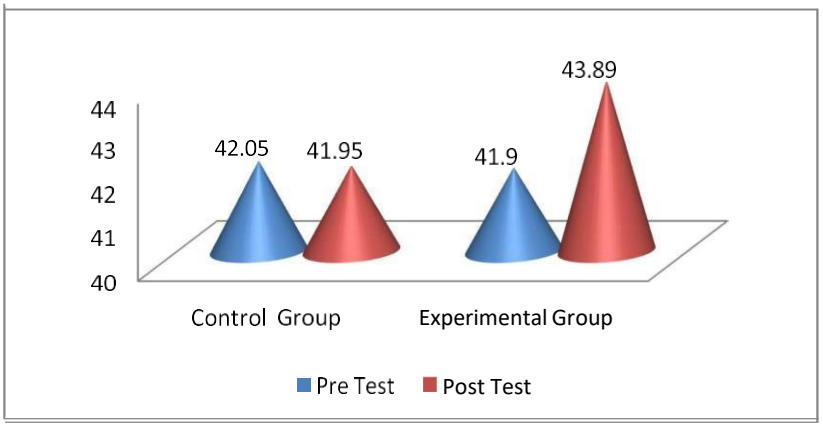

Fig 1: *Bar diagram showing the pre and post mean values of experimental and control group on Vertical jump*

DISCUSSIONS ON FINDINGS

The result of the study indicates that the experimental group, namely the ballistic training group, significantly improved the selected dependent variable, namely vertical jump, when compared to the control group. It is also found that the improvement was caused by maximal power training when compared to the control group.

CONCLUSIONS

1. There was a significant difference between the experimental and control groups on the vertical jump after the training period.
2. There was a significant improvement in the vertical jump. However, the improvement was in favor of the experimental group due to twelve weeks of ballistic training.
3. In conclusion, the impact of ballistic training on vertical jump performance in college male basketball players is undeniable. Through its focus on explosive movements and power development, ballistic training offers athletes a proven pathway to enhancing their athletic abilities. By embracing this specialized training approach, players can soar to newheights on the basketball court, both figuratively and literally.

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