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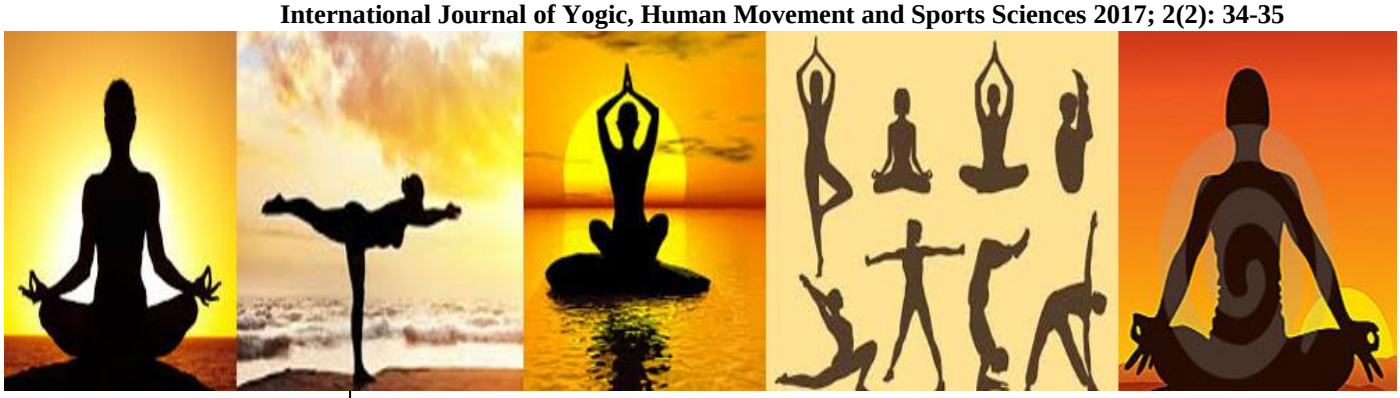

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Effect of weight training on maximum strength of untrained men students

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Abstract
The purpose of the study was to investigate the effect of weight training on maximum strength of untrained men students. To achieve the purpose of the study thirty (age 18 to 22 years) men students were selected as subjects from Department of Arts and Sciences, Annamalai University. The selected subjects divided into two groups either weight training group (n=15) or control group (n=15) to find the changes on maximum strength. The collected data analysed by the analysis of covariance (ANCOVA) were applied to find out the significant difference among the two groups. The result of the study showed that due to the effect of weight training on maximum strength significantly improved of the subjects.

Keywords: Weight training and maximum strength

Introduction
The relevance of weight training on the increments of maximum strength levels in students is well expressed in the results obtained on a experimental study, which makes it possible to conclude that students' maximum strength has increased because of weight training programs. Besides, weight training is a basic component on fitness and conditioning programs [1] and a safe, effective, and profitable method for students. Furthermore, it has been used by high-school and college's strength and conditioning coaches who participated in a survey on strength and conditioning practices [3]. Nevertheless, in the past years, a few studies have investigated the effects of resistance training programs on the improvement of adolescent athletes' explosively levels [4]. Despite the existence of several studies on the significant effects of plyometric training or combined training in young basketball players, the available literature shows a scarcity of studies on resistance training program effects with young basketball players. Despite the importance of resistance training on strength development in basketball players, a review of observational and experimental studies on vertical jump in female and male basketball players only refers to the 3 resistance training investigations just mentioned. The key factor to successful resistance training at any level of fitness or age is appropriate program design [6]. In a study with adolescent soccer players, the authors observed a significant improvement in jumping ability as a result of strength training characterized by the absence of specific exercises for the improvement of jump performance. In this way, researcher wanted to verify whether weight training with moderate intensities and loads associated has positive effects on the students' maximum strength.

Methodology
The purpose of the study was to investigate the effect of weight training on maximum strength of untrained men students. To achieve the purpose of the study thirty (age 18 to 22 years) men students were selected as subjects from Department of Arts and Sciences, Annamalai University. The selected subjects divided into two groups either weight training group (n=15) or control group (n=15) to find the changes on maximum strength. Maximum strength was assessed by 1RM test, this test were conducted before and after the twelve weeks training programme. The collected data analysed by the analysis of covariance (ANCOVA) were applied to find out the significant difference among the two groups. The result of the study showed that due to the effect of weight training on maximum strength significantly improved of the subjects.

Training protocol

The experimental group performed the weight training programme three sessions per week on alternative days for 12 weeks. The weight training program was a total body workout consisting of 3 sets of 6-10 repetitions on 5 exercises that trained all the major muscle groups. A percentage of each subject's one-repetition maximum for each exercise was used to determine the intensity of each week. The intensity and number of repetitions performed for each exercise changed once in two weeks as training progressed.

Results

Table 1: Analysis of covariance on maximum strength of weight training and control groups

	Weight Training Group	Control Group	S o V	Sum of Squares	df	Mean squares	'F' ratio
Pre test Mean	35.20	34.93	B	0.86	1	0.86	0.52
SD	1.37	1.27	W	49.33	28	1.64	
Post test Mean	40.66	35.40	B	98.83	1	98.83	47.28*
SD	1.57	1.29	W	58.53	28	2.09	
Adjusted Post test Mean	39.06	35.20	B	82.20	1	82.20	49.81*
			W	44.62	27	1.65	

(The required table value for significance at 0.05 level of confidence with degrees of freedom 1 and 27 is 4.21 and degree of freedom 1 and 28 is 4.20.)

*Significant at .05 level of confidence

Table – I shows that the pre-test means and standard deviation on maximum strength of weight training and control groups are 35.20 + 1.37 and 34.93 + 1.27 respectively. The obtained 'F' ratio value is 0.52 of maximum strength was less than the required table value of 4.20 for the degrees of freedom 1 and 28 at 0.05 level of confidence.

The post-test means and standard deviation on maximum strength of weight training and control groups are 40.66 + 1.57 and 35.40 + 1.29 respectively. The obtained 'F' ratio value is 47.28 of maximum strength was greater than the required table value of 4.20 for the degrees of freedom 1 and 28 at 0.05 level of confidence.

The adjusted post-test means on maximum strength of weight training and control groups are 39.06 and 35.20 respectively. The obtained 'F' ratio value is 49.81 of maximum strength was greater than the required table value of 4.21 for the degrees of freedom 1 and 27 at 0.05 level of confidence. Hence it was concluded that due to the effect of twelve weeks of weight training the maximum strength of the subjects was significantly increased.

Discussion

The result of the study stated that twelve weeks of weight training significantly improved on maximum strength of the untrained men students. The findings of previous research are supported on the current research, which reported significant increases in non basketball players' vertical jump height [2] and medicine ball distance. However, conversely to our findings, other studies did not identify significant improvements in the vertical jump of basketball players and non basketball players all submitted to resistance training programs [5]. Resistance training is a crucial methodology when the aim is to develop higher levels of muscular strength and power implied on basketball jumping.

Conclusion

The conclusion of the study stated that twelve weeks of weight training significantly improved on maximum strength of the untrained men students.

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