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Effect of weight training programme on body composition, muscular endurance, and muscular strength of males

Kaukab Azeem and Abdulhameed Al Ameer

Physical Education Department, King Fahd University of Petroleum & Minerals, Saudi Arabia

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ABSTRACT

Fitness is the key for the overall performance of the athletes. Fitness is the product of exercise and training. Fitness is an important implication in the general health of the individuals.Strength is the ability to overcome resistance or to act against contractions. It is in fact, a product of voluntary muscle contractions caused by the neuro-muscular co-ordination. Strength is the capacity of muscles to exert force against resistance, (Kirkley, 1978). Flexibility is the range of motion available in a joint (Charles B. Corbin and Ruth Lindsey, 1978). Muscular endurance is defined as the ability to muscle to apply force repeatedly into sustains a contraction for a period of time, (Hockey, 1973). The purpose of this study was to investigate the effect of weight training program on the selected fitness variables among the males from pre to post test. A group of 30 subjects were selected for this study from the various sections of physical education college course. The age of the participants was between 18-22 years. The selected physical fitness test considered for this study was body composition (body mass index, BMI), muscular endurance (free squats and push-ups test for 30 sec respectively), muscular strength (Squat and bench press 1RM),The Weight training programme was employed for five weeks in the summer semester, 45 minutes of training per session, four days in a week. A pre and post selected fitness test were conducted before and after the training programme. For analyzing the data, mean, Standard deviation, and t-tests were computed by means of Statistica Software. The analysis of data shows that the body mass index of the participants from pre to post test shows insignificant performance. With regard to other selected variables i.e. free squats, push-ups, squats (1RM), bench press (1RM) shows encouraging and significant results from pre to post test. It is concluded that the effect of five weeks weight training program had not shown any effective means in reduction of the body weight of the participants from pre to post test. Further more the effect of five weeks weight training program had shows improved performance with regard to free squats, push-ups, squats and bench press, which is very encouraging and significant.

Keywords: Fitness, weight training, program, strength, endurance

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INTRODUCTION

Fitness is the key for the overall performance of the athletes. Fitness is the product of exercise and training. Fitness is an important implication in the general health of the individuals. Weight training is primarily an isotonic form of exercise, as the force produced by the muscle to push or pull weighted objects should not change (though in practice the force produced does decrease as muscles fatigue). Any object can be used for weight training, but dumbbells, barbells, and other specialized equipment are normally used because they can be adjusted to specific weights and are easily gripped. Many exercises are not strictly isotonic because the force on the muscle varies as the joint moves through its range of motion. Weight training is a safe form of exercise when the movements are slow, controlled,

and carefully defined. However, as with any form of exercise, improper execution and the failure to take appropriate precautions can result in injury. Physical fitness is a limited phase of motor ability emphasizing capacity for vigorous work (Mathews, 1979). A person's total body weight may not change over time. But the weighting machine does not assess how much of that body weight is fat and much is lean mass, body composition is important to consider for health and managing (Johnson and Nelson 1998). The most widespread method to measure the body composition is with help of body mass index (BMI). The body mass index (BMI) is a simple statistical measurement which compares a person's weight and height by BMI= weight in kgs \ (height in meters) 2. A regular stretching exercise during training sessions will ensure that your joints and muscles to their fullest and hence, it will increase the flexibility of the joints and overall body. Flexibility is the range of motion available in a joint (Charles B. Corbin and Ruth Lindsey, 1978). The sit and reach test is a common measure of flexibility, and specifically measures the flexibility of the lower back and hamstring muscles. This test is important as because tightness in this area is implicated in lumbar lordosis, forward pelvic tilt, and lower back pain. This test was first described by Wells and Dillon (1952). Muscular endurance is defined as the ability to muscle to apply force repeatedly into sustains a contraction for a period of time, (Hockey, 1973). The role of strength training for improving health, good posture, sports performance, and prevention of sports injuries plays an important role. Strength is the ability to overcome resistance or to act against contractions. It is in fact, a product of voluntary muscle contractions caused by the neuro-muscular co-ordination. Strength is the capacity of muscles to exert force against resistance, (Kirkley, 1978).

The purpose of this study was to investigate the effect of weight training program on the selected fitness variables among the males from pre to post test.

MATERIALS AND METHODS

A group of 30 subjects were selected for this study from the various sections of physical education college course. The age of the participants was between 18-22 years. The selected physical fitness test considered for this study was body composition (body mass index, BMI), muscular endurance (free squats and push-ups test for 30 sec respectively), muscular strength (Squat and bench press 1RM). The Weight training programme was employed for five weeks in the summer semester, 45 minutes of training per session, four days in a week. A pre and post selected fitness test were conducted before and after the training programme. For analyzing the data, mean, Standard deviation, and t-tests were computed by means of Statistica Software.

Table:1

Sl.no	Test	Purpose
1	Body composition	To find out the body mass index (BMI)
2	Free squats (30 seconds)	To find the muscular endurance of the lower limbs
3	Push-ups (30 seconds)	To find out the muscular endurance of the upper limbs
4	Squat (1RM) Kgs	To find out the muscular strength of the Thighs
5	Bench press (1RM) Kgs	To find out the muscular strength of the chest

RESULTS AND DISCUSSION

The analysis of the data shows the results of the study pertaining to the selected variables, body mass index (BMI), free squats, push-ups, squats, and bench press from pre to post test.

Table: 2

Test Items	Pre-test N=30		Post-test N=30		't'value	P-value
	Mean	S.D	Mean	S.D		
Body mass index (BMI)	26.54	5.80	25.99	6.20	0.49	0.6425
Free squats (30 sec)	19.70	4.90	30.87	2.69	10.86	0.0000
Push-ups (30 sec)	15.20	4.82	26.39	6.48	9.70	0.0000
Weight squat(1RM) Kgs	47.50	14.59	77.17	13.30	13.22	0.0000
Bench press (1RM) Kgs	30.96	7.70	54.00	13.48	11.54	0.0000

The mean and Standard deviation of body mass index (BMI) in the pre and post test were (26.54, 5.80) and (25.99, 6.20) respectively. The data clearly speaks of a little change in the body mass index among the participants by negligible reduction in body mass index from pre to post scores, which is insignificant at ($p<0.05$).

The mean and standard deviation with regard to free squats of the participants from pre to post test were (19.70, 4.90) and (30.87, 2.69) respectively. The data shows an improved performance in the free squats among the participants. This is evident that the subjects had improved muscular endurance in the lower limbs, which is significant at (p> 0.05).

The mean and standard deviation with regard to push-ups of the participants from pre to post test were (15.20, 4.82) and (26.39, 6.48) respectively. The data shows an improved performance in the push-ups for 30 seconds among the participants. This is clear that the subjects had improved muscular endurance in the upper limbs, which is significant at (p> 0.05).

With regard to the weight squats (1RM), recorded in kgs shows encouraging results from pre to post test. The mean and standard deviation from pre to post test were (47.50, 14.59) and (77.17, 13.30) respectively. The scores shows improvement in muscular strength in the thighs of the subjects, which is significant at (p> 0.05)

The mean and standard deviation with regard to bench press (1RM) recorded in Kgs, from pre to post test were (30.96,7.70) and (54.00, 13.48) respectively. The data shows improved performance in the chest among the subjects with regard to muscular strength from pre to post test which is very encouraging, and significant at (p> 0.05)

CONCLUSION

It is concluded that the effect of five weeks weight training program had not shown any effective means in reduction of the body weight of the participants from pre to post test.

It is concluded that the effect of five weeks weight training program had shows improved performance with regard to free squats and push-ups exercises, which is significant..

It is concluded that the effect of five weeks weight training program had shows greater performance with regard to squats and bench press exercises respectively, which is very encouraging and significant.

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REFERENCES

[1] Charles B. Corbin and Ruth Lindsey, concepts of physical fitness with Laboratories'', St.Lois: The CV.Mosby, **1978**, P-10-83..
[2] Clarke Harrison H and Clarke, David H. Application of measurement of physical education, Englewood Cliffs, New Jersey, Prentice Hall Inc, **1987**, P.146-147.
[3] Delavier, Frederic Strength Training Anatomy. Human Kinetics Publishers **2001**. ISBN 0-7360-4185-0.
[4] Hockey, Robert V. Physical fitness the pathways to healthful living, St. Louis: The C.V. Mosby company, **1973**.
[5] Johnson. B.L. and Nelson. J.K.. Practical measurement and evaluation in physical education, New Delhi. Surjeet publications, **1988**, P: 28.
[6] Kirkley, G., and John. Good Body,. The manual of weight training, St Lous: The C V Mosby Company, **1969**, P5.
[7] Mathews, Donald. K. Measurement in physical education, Philadelphia: Lea and Febiger, **1979**, 113.
[8] Schwarzenegger, Arnold. The New Encyclopedia of Modern Bodybuilding. Simon & Schuster. **1999**, ISBN 0-684-85721-9.
[9] Wells, K.F. & Dillon, E.K. The sit and reach.. A test of back and leg flexibility. *Research Quarterly*, **1952**, 23. 115-118.