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Effect of bounce drop jump exercise on leg strength and power of different age group students

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Abstract

Life is endless chain of actions and reactions, experiences and experiments, and trials and errors. In order to face the task and to continue the life cycle efficient, one should be physically wholesome, mentally alert and socially sound. Fitness leads to live long and serve best. Fitness is a desired state for everyone who wants to lead a useful and productive life. Fitness is not a thing to be achieved without any effort. A whole hearted and sincere effort is required to obtain it. The investigator has included 44 boys as subjects, out of which 22 were M.G. High school, Gadchandur, and 22 M.G. Junior College Gadchandur. To analyze the data, Mean Standard Deviation and t ratio were worked out. The Statistical analysis shows that there is significant different between pre exercise and post exercise programme vertical jump and leg lift with dynamometer. This study pointed out that age group 15-17 Years was effected more than other group.

Keywords: Strength, power, exercise and bounce drop jump

Introduction

Man is always striving for perfection in every area of knowledge and practice. Human being is a unique product to nature's creations and evolutions. It is no doubt, on account of highly developed muscular and nervous system, which enables him to think, express and search whatever he wants to do. In the modern life, the scientific development, technological advancement and research findings in every part of life demands fitness to overcome all the behaviors of life. A happy child is a pride of nation, children are the world greatest resources let us have a great millennium ahead with reference to the investment of child's developments which would be an investment of a strong and developing nation like our country India. Exercises play very vital role in maintaining general health and to improve it at certain level. The heart an circulatory system themselves become stronger and more efficient after a prolonged period of regular vigorous exercise. Through training and exercise there is a corresponding increase in the efficiency of the respiratory functions in order to obtain the vita oxygen so necessary for body processes.

Purpose of the study

The main purpose of the study is to find out the Effect of Bounce Drop jump exercise on Leg Strength and Power of different age group students.

Hypothesis of the study

It was hypothesized that there may be different in log muscular strength and explosive power of various age groups after providing the exercise programme.

Methodology of the study

This study was conducted on the students of M.G. High school and M.G. Junior College Gadchandur. Only male subjects were taken for the study. This study was circumscribed to leg muscular strength and log explosive power. The numbers of subjects were delimited to 44 only. The age groups were (A) 12-14, (B) 15-17. Leg Dynamometer was used to measure the leg muscular strength and Sargent vertical jump test to measure explosive power. The height of Wooden boxes for exercise is 16"and 18".

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Exercise programme

Total duration of Exercise Programme: 8 Weeks

Total Sessions per Week: 5 Days

Box Heights: 16”and 18”

Each session consists of: Jogging for 1 to 2 minutes, Static stretching for 5 minutes, 18 warming up jumps. Drop Jumping Exercise and Cool down exercise.

Analysis of data

To analyze the data, mean standard Deviation and t ratio were worked out. The data were analyzed in Basic Language at the computer centre. All the analysis used were based on Standard Statistical Packages.

Table 1: Statistical findings of Vertical Jump performance for the scores of Group A (12-14 Years)

Parameter	Group	N	M ₁	M ₂	MD	SD ₁	SD ₂	't' Value
Vertical Jump	Exercise group	22	225.78	184.18	41.6	32.84	32.98	4.19*
	Control group	22	221.04	234.09	13.05	33.55	34.13	1.27

*Significance at .05 level of confidence. Tabulated 't' .05 (21) = 2.08

Table No.01 indicated that there was significant difference between initial and final mean scores of Vertical Jump for (Exercise group) as the computed 't' value of 4.19 was greater than tabulated value of 't' .05(21) =2.08 However, in case of Control Group the values of 't' 1.27 was not significant at .05 level. It might be concluded that the bounce drop jump exercise increased the muscular strength and explosive power.

Table 2: Statistical findings of Leg Lift performance for the scores of Group A(12-14 Years)

Parameter	Group	N	M ₁	M ₂	MD	SD ₁	SD ₂	't' Value
Leg Lift	Exercise group	22	172	130.95	41.05	35.61	32.47	3.99*
	Control group	22	154.54	160.01	5.46	29.55	29.86	0.61

*Significance at .05 level of confidence. Tabulated 't' .05 (21df) = 2.08

Table No.02 indicated that there was significant difference between initial and final mean scores of Leg: oft for (Exercise group) as the computed 't' value of 3.99* was greater than tabulated value of 't' .05(21) =2.08 However, in case of Control Group the values of 't' 0.61 was not significant at .05 level. It might be concluded that the bounce drop jump exercise increased the muscular strength and explosive power.

Table 3: Statistical findings of Vertical Jump performance for the scores of Group A(15-17 Years)

Parameter	Group	N	M ₁	M ₂	MD	SD ₁	SD ₂	't' Value
Vertical Jump	Exercise group	22	171	121.7	49.3	32.87	22.44	3.91*
	Control group	22	158	164.1	6.1	43.91	37.07	0.33

*Significance at .05 level of confidence. Tabulated 't' .05 (21) = 2.08

Table No.03 indicated that there was significant difference between initial and final mean scores of Vertical Jump for (Exercise group) as the computed 't' value of 3.91 was greater than tabulated value of 't' .05(21) =2.08 However, in case of Control Group the values of 't' 0.33 was not significant at .05 level. It might be concluded that the bounce drop jump exercise increased the muscular strength and explosive power.

Table 4: Statistical findings of Leg Lift performance for the scores of Group A (15-17 Years)

Parameter	Group	N	M ₁	M ₂	MD	SD ₁	SD ₂	't' Value
Leg Lift	Exercise group	22	223.3	178.7	44.6	31.84	32.7	3.09
	Control group	22	224.4	236.4	12	38.71	33.52	0.74

*Significance at .05 level of confidence. Tabulated 't' .05 (21df) = 2.08

Table No.04 indicated that there was significant difference between initial and final mean scores of Vertical Jump for (Exercise group) as the computed 't' value of 3.09 was greater than tabulated value of 't' .05(21) =2.08 However, in case of Control Group the values of 't' 0.74 was not significant at .05 level. It might be concluded that the bounce drop jump exercise increased the muscular strength and explosive power.

Conclusions

On the basis of this study the following conclusions were drawn.

1. That the bounce drop jump exercise is helpful to improve leg muscular strength and explosive power for all selected age groups.
2. As the muscular strength is increases so the explosive power of legs increases.
3. Explosive power of legs much more affected by this exercise programme than muscular strength.
4. The age group B (15-17 Year) seems more sensitive to this exercise programme, but final conclusion could be drawn only after proper and direct study to find this effect.

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