



**ORIGINAL RESEARCH PAPER**

**Physical Education**

**IMPACT OF COORDINATION EXERCISES ON UPPER AND LOWER LIMB POWER OF TEEN AGE BOYS**

**KEY WORDS:** Exercise, upper limb, lower limb.

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**ABSTRACT**

The purpose of the study was to determine the impact of coordination exercises on upper and lower limb power of teen age boys. The subjects of the study were 30 male students were selected by simple random sampling method. The subject's age ranged between 13 to 16 years. The explosive power was selected as the dependent variable for the study. All the subjects were tested on the selected dependent variable on both limbs such as Sargent jump (lower limb) and throwing a 200 grams medicine ball to the farthest distance (upper limb) before training and after training programme. The subjects underwent coordination exercise such as multi directional running, Jumping and skipping, opposite arm circles, simultaneous arm and leg circles, cross step-over running and Obstacles running for twelve weeks, three days per week for 45 to 60 minutes per day with suitable warming-up and cooling down exercises. The results of the study concluded that coordination exercises significantly increased the explosive power of the lower and upper limbs of teen age boys.

**INTRODUCTION**

Walking running, catching, throwing and climbing stairs all require some degree of coordination. Many exercises are there that may improve coordination in the lower extremities (Mike McLaughlin, 2013). The key ingredient to working with early adolescent is providing global stimulation from a movement perspective. Developing basic coordination through movement stimulus is necessary, with the eventual goal of developing sport-specific coordination in the teenage years. (Brian Grasso, 2013).

Coordination is best developed in the late childhood with the most crucial period being between 10 – 13 years of age (Brian Grasso, 2013). The ability to optimally develop coordination ends at around the age of 16. This validates that early exposure is the key from an athletic development view point. Furthermore, it is important to understand that coordination-based exercise must be introduced during the pre-adolescence ages.

**METHODOLOGY**

For the purpose of the study, 30 male students were selected by simple random sampling method. The subjects age ranged between 13 to 16 years. The explosive power was selected as the dependent variable for the study. All the subjects were tested on the selected dependent variable on both limbs such as Sargent jump (lower limb) and throwing a 200 grams medicine ball to the farthest distance (upper limb) before training and after training programme. The subjects underwent coordination exercise such as multi directional running, Jumping and skipping, opposite arm circles, simultaneous arm and leg circles, cross step-over running and Obstacles running for twelve weeks, three days per week for 45 to 60 minutes per day with suitable warming-up and cooling down exercises. The paired mean 't' test was used to find out the significant difference between pre and post test on the explosive power of the limbs. The level of confidence was fixed at 0.05.

**RESULTS**

The paired mean t-test between pre and post test on explosive power of upper limbs and lower limbs:

Variable	Test	Pre Test	Post test	Df	'T' Value
Lower limb power (Sargent Jump)	Mean	40.23	45.10	29	16.90*
	SD	2.41	2.18		
Upper Limb Power (Ball Throw)	Mean	25.09	31.42	29	15.10*
	SD	1.24	1.62		

\*Significant at 0.05 levels.

The Table Value for df 29 is 1.70. The above table indicates that there is significant difference between the pre and post on upper and lower limb explosive power.

**DISCUSSION**

The result of the present study showed a positive correlation with some other studies conducted in the past. The coordination ability exercises lead to the improvement of the physical abilities including muscular power (Liakh, V., 2001 and Abdel-Khalek, E., 2005), The arm power showed an improvement by involving in coordination exercises & the leg power also elevated to a great extent. It was revealed that the overall muscular power shows a positive response on involving the muscles to coordination exercises. (El-Sawaf, N.M., 2009 and Abd El-Hamid, G., 1990). The results of the present study make it clear that coordination exercises lead to the improvement and development of the explosive power of upper and lower limbs.

**CONCLUSION**

The results of the study concluded that coordination exercises significantly increased the explosive power of the lower and upper limbs of teen age boys. So it is advised to go for coordination exercises in general and specially Coordination exercise programmes should be done in addition to the training routine to perform better in the sports events by athletes.

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