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Influence of Medicine Ball Exercise and Resistance Training Programme on Selected Physical Variable and Skill Performance of Inter-collegiate Men Handball Players

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Abstract

The purpose of the study was to find out the effect of medicine ball exercise and resistance training programme on selected physical variable and skill performance of inter collegiate men handball players, to achieve that 45 subjects aged from 19 to 23 years from affiliated college of Madurai Kamaraj University, Tamilnadu were selected. The subjects (N = 45) were divided into three equal groups. Namely, Group - I underwent medicine ball training (MTG), Group - II underwent resistance training (RTG), and Group - III acted as control group (CG) were not given any specific training. Each group consists of 15 subjects. The following criterion variables were chosen namely speed, agility, explosive power, arm strength, shooting and passing. They were assessed before and after six weeks in all groups. The analysis of co-variance (ANACOVA) was used to determine any significant difference was present among the three groups of the dependent variables. The study revealed that the selected dependent variables such as speed, agility, explosive power, arm strength, shooting and passing have significant improvement due do influence of medicine ball training and resistance training.

Keywords: Medicine Ball, Resistance, Physical, Skill, Handball.

Introduction

Most scientific knowledge, whether from experience or research aims at understanding and improving the effects of exercise on the body, exercise is the focus of sports science. Research from several sciences enriches the theory and methodology of training, which has become a science on its own. Sports have become as competitive as other fields in the world. In ancient times, our ancestors exhibited the extraordinary talents in terms of physical activity. But now it has become completely professional. Regular physical activity during adolescence is associated with numerous physiological and psychosocial benefits and has the potential to improve the quality of life for boys and girls (Corbin & Pangrazi, 1993; United States Department of Health and Human Services, 1996).Furthermore, it appears that physical activity habits established early in life may persist into adulthood (Taylor, Blair, Cummings, Wun, &Malina, 1999).

Medicine ball exercises are effective for improving sport-specific as well as overall strength, fitness, flexibility and body coordination. They can be performed alone or with one or more partners. Using a medicine ball adds a whole new dimension to your training since it takes you through all planes of motions.

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It combining a medicine ball with your stability ball is a great way to challenge every muscle in your body. Resistance training is a specialized method of physical conditioning that involves the progressive use of a wide range of resistive loads –from medicine balls to high intensity plyometrics-that enhance or maintain muscular fitness (i.e. muscular strength, muscular power, and local muscular endurance).Resistance training is a form of exercise for the development of strength and size of skeletal muscles. Resistance training, also known as weight training or strength training, is for everyone. When one does it properly it can provide significant functional benefits and improvement in overall health and well-being.

Methodology

To achieve that 45 subjects aged from 19 to 23 years from affiliated college of Madurai Kamaraj University, Tamilnadu were selected, subjects (N = 45) were divided into three equal groups. Namely, Group - I underwent medicine ball training group (MTG), Group - II underwent resistance training group (RTG), and Group - III acted as control group (CG) was not given any specific training. Each group consists of 15 subjects. The following criterion variables were chosen namely speed, agility, explosive power, arm strength, shooting and passing. They were assessed before and after six weeks in both groups. The analysis of co-variance (ANACOVA) was used to determine any significant difference was present among the three groups of the

dependent variables. These three groups were compared, when the obtained the 'F' ratio for the adjusted post-test mean was found to be significant, the scheffe's post hoc test was applied to determine the paired mean differences.

Result

Table I. Analysis of covariance on selected physical variable and skill performance of inter collegiate men handball players

Variables	MTG	RTG	CG	Source of Variance	Sum of square	df	Mean Square	F
Speed	7.88	7.35	7.32	**Between**	1.232	2	0.616	15.40*
				Within	1.630	41	0.040	
Agility	13.79	13.55	13.40	**Between**	3.80	2	1.90	13.57*
				Within	5.58	41	0.14	
Explosive Power	52.05	55.26	49.32	**Between**	246.6	2	123.3	26.23*
				Within	192.7	41	4.70	
Arm Strength	53.97	56.31	49.43	**Between**	496.20	2	248.01	66.49*
				Within	153.03	41	3.73	
Shooting	41.62	39.06	35.20	**Between**	225.99	2	113.00	79.58*
				Within	58.20	41	1.42	
Passing	32.96	30.71	27.03	**Between**	238.24	2	119.12	67.68*
				Within	72.20	41	1.76	

Table II. Schefee's post hoc comparison on all variables

Variable	MTG	RTG	CG	CI Value
Speed	7.88*	7.35	7.32	0.19
Agility	13.79 *	13.55	13.40	0.30
Explosive Power	52.05	55.26*	49.32	2.06
Arm Strength	53.97	56.31*	49.43	3.04
Shooting	41.62*	39.06	35.20	1.29
Passing	32.96*	30.71	27.03	2.11

MTG-Medicine ball training group **RTG-** Resistance training group **CG-**Control group

Discussion on Findings

The results of the study indicate that the experimental group namely medicine ball exercise and resistance training programme were significantly improved the selected variables namely speed, agility, explosive power, arm strength (physical) shooting and passing (skill performance) when compared to the control group. From the results of the present investigation, it is also concluded that significant difference exists between experimental group and control group in developing all variables. The medicine ball training was significantly improved speed, agility, shooting and passing. The resistance training was significantly improved explosive power and arm strength.

(Stockbrugger et al.). The subjects in the Medicine training improves speed, agility, shooting and passing (5.67%, 4.86%, 15.15%, 12.41%, and 19.06%) respectively by finding significant improvements were noted from the speed, agility, shooting and passing between the pre and post-test scores. Therefore, medicine ball training is indeed effective in enhancing speed, agility, shooting and passing. It is also concluded that significant difference exists between experimental group and control group in developing all variables. The resistance training was significantly improved explosive power and arm strength.

Conclusions

1. It was concluded that the medicine ball training and resistance training programmes enhanced the performance of physical and skill performance variable namely of (speed, agility, explosive power, arm strength, shooting and passing) inter-collegiate men handball players.
2. The medicine ball training programme was more effective then the resistance training in improving the physical and skill performance variable (speed, agility, shooting and passing) of inter-collegiate men handball players.
3. It was concluded that the resistance training programme was more effective than the medicine

ball programme in improving (explosive power and arm strength) of inter- collegiate men handball players.

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