



EFFECT OF TRANSIENT RESISTANCE TRAINING AND REGULAR RESISTANCE TRAINING ON THE DEVELOPMENT OF MUSCULAR STRENGTH ENDURANCE, FLEXIBILITY AND OVERALL PLAYING ABILITY OF SCHOOL LEVEL BOYS BASKETBALL PLAYERS

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DOI: 10.48047/ecb/2023.12.si4.1651

ABSTRACT

Male high school basketball players from St. Claret School in Jalahalli, Bangalore, were chosen for the study in order to fulfil its goals. The subjects were between the ages of 14 and 16. 80 Boys were split into four equal batches for the study's before and after-test random batch design. The subjects were split into one of four batches at random, with the first batch (N-20, STRRTWST batch) combining short-term and frequent resistance training with skill development, the second batch (N-20, STRTWST batch) performing Transient resistance training with skill training, the third batch (N-20, RRTWST batch) performing regular resistance training with skill training, and the fourth batch (N-20, control batch) performing neither short-term nor regular resistance training with skill training. The data were analysed using analysis of variance. The outcome demonstrated that all training sessions caused a discernible improvement in every measure. The short term and skill training batch, regular resistance training and skill training, and control batch all exhibited considerably less progress in all the variables than the short term and skill training batch did.

KEY WORDS : Flexibility, Muscular strength endurance, Basketball skill training, regular resistance training, short term training.

INTRODUCTION

Nowadays, the phrase "sport for all" has gained enormous popularity around the world. Successful athletes nowadays are among the most well-liked figures in society. The media is gushy in its acclaim for spectacular performances. When it comes to both player engagement and spectator sports, basketball is among the most popular sports in the world. Fast, rapid, forceful, and alluring describe it. It is regarded as a demanding game since it demands a high level of athleticism, intellect, and mental alertness. All of the fundamental actions in basketball involve the basic abilities of balance, relaxation, and protection. A player's ability to play with natural motions and master basic movements will be a resource for mastering the game in which they are engaged. Any exercise that requires the muscles to contract against an external resistance in the hopes of gaining strength, tone, mass, and/or endurance is considered resistance training (Deschenes and Kraemer 2002; Kraemer and Ratamess 2004). External resistance can be provided by dumbbells, rubber exercise tubing, your own body weight, blocks, water bottles, or any other item that causes the muscles to contract. Weight training involves applying resistance other than body weight. It is typically employed to increase physical strength. Moreover, it improves coordination, suppleness, and muscle endurance. Increased neuromuscular capacity can be achieved by resistance exercise. People utilise it to increase their muscle hypertrophy, strength, and power.

METHODOLOGY

80 Boys were split into four equal batches for the study's before and after-test random batch design. The subjects were randomly assigned to one of four batches, where the first batch (N-20, STRRTWST batch) engaged in both short-term and regular resistance training with skill training, the second batch (N-20, STRTWST batch) engaged in Transient resistance training with skill training, the third batch (N-20, RRTWST batch) engaged in regular resistance training with skill training, and the fourth batch (N-20, control batch) did not engage in any specific resistance training. Variables like flexibility and muscular strength endurance were assessed using the sit-up test and the sit-and-reach test, respectively. The judges' rating exam was used to gauge overall playing skill. Tests were conducted both before and after the 12-week programme.

ANALYTICAL CONSIDERATION OF THE EXAMINATION'S DATA AND FINDINGS

The significance of the mean changes between the beforetest and after-test values of a variable within the same batch was assessed using a paired sample of the student t-test. The analysis of variance (ANOVA) was used for identifying the batch's significant differences. Statistical significance was accepted as $p \leq 0.05$ level of confidence.

EXPERIMENTAL DESIGN

80 Boys were divided into four equal batches for the study's Pre and Post test random batch design. The N-20, STRRTWST batch performed both short-term and regular resistance training with skill training, the N-20, STRTWST batch performed Transient resistance training with skill training, the N-20, RRTWST batch performed regular resistance training with skill training, and the third batch (N-20, control batch) did not perform any specific exercises.

SELECTION OF VARIABLES

1. Muscular strength endurance – Sit-Ups test
2. Flexibility – Sit & Reach test
3. Overall playing ability- Judges rating test

Table-1

**Computation Of 't' Ratio Of Strrtwstg, Strtwstg, Rrtwstg
And Control batch On Muscular Strength Endurance**

batches	Before Test		After Test		MD	SEM	t value
	Mean	SD	Mean	SD			
STRRTWSTG	20.65	2.03	25.70	2.15	5.05	0.245	20.54*
STRTWSTG	20.40	2.98	23.85	3.03	3.45	0.266	12.95*
RRTWSTG	20.60	2.98	22.85	3.04	2.25	0.376	5.98*
CG	20.15	2.71	20.40	2.47	0.25	0.14	1.75

From the results it was inferred that, all the three combinations STRRTWSTG, STRTWSTG, RRTWSTG produced a significant improvement in muscular strength endurance on School Level Boys Basketball Players.

Table-2
Computation Of ‘t’ Ratio Of Strrtwstg, Strtwstg, Rrtwstg
And Control batch On Flexibility

batches	Before Test		After Test		MD	SEM	t value
	Mean	SD	Mean	SD			
STRRTWSTG	22.60	1.09	25.85	1.30	3.25	0.216	15.03*
STRTWSTG	22.45	1.70	25.25	1.20	2.80	0.304	9.20*
RRTWSTG	22.40	1.14	24.20	0.83	1.80	0.212	8.46*
CG	22.20	1.79	22.30	1.83	0.017	0.068	1.45

From the results it was inferred that, all the three combinations STRRTWSTG, STRTWSTG, RRTWSTG produced a significant improvement in Flexibility on School Level Boys Basketball Players.

Table-3
Computation Of ‘t’ Ratio Of Strrtwstg, Strtwstg, Rrtwstg
And Control batch On Over All Playing Ability

batches	Before Test		After Test		MD	SEM	t value
	Mean	SD	Mean	SD			
STRRTWSTG	4.56	0.62	7.04	0.53	2.48	0.109	22.73*
STRTWSTG	4.51	0.56	6.23	0.64	1.71	0.135	12.68*
RRTWSTG	4.41	0.50	5.09	0.57	0.68	0.19	3.57*
CG	4.29	0.48	4.41	0.78	0.117	0.206	0.56

From the results it was inferred that, all the three combinations STRRTWSTG, STRTWSTG, RRTWSTG produced a significant improvement in overall playing ability on School Level Boys Basketball Players.

Table-4

Pre and after-test Means Of Strrtwstg, Strtwstg, Rrtwstg and Control batch On Muscular Strength Endurance using Analysis Of Variance

Mean	STRRTWSTG	STRTWSTG	RRTWST G	CG	SOV	SOS	Df	M S	F-value
beforetest	20.65	20.40	20.60	20.15	BG	3.10	3	1.03	0.14
					WG	556.70	76	7.32	
after-test	25.70	23.85	22.85	20.40	BG	292.70	3	97.56	13.33*
					WG	556.10	76	7.31	

At the 0.05 level of confidence, the resulting 'F' ratio value of muscular strength endurance was 13.33*, which was more than the needed table value of 2.73 for degrees of freedom 3 and 76.

Table-5

Pre and after-test Means Of Strrtwstg, Strtwstg, Rrtwstg and Control batch on Flexibility using Analysis Of Variance

Mean	STRRTWSTG	STRTWST G	RRTWSTG	CG	SOV	SOS	Df	M S	F-value
beforetest	22.60	22.45	22.40	22.20	BG	1.63	3	0.54	0.25
					WG	163.75	76	2.15	
after-test	25.85	25.25	24.20	22.30	BG	145.50	3	48.50	26.76*
					WG	137.70	76	1.81	

At the level of confidence ie. 0.05, derived 'F' ratio value of 26.76* of Flexibility was larger than the needed table value of 2.73 for degrees of freedom 3 and 76.

Table-6

Pre and after-test Means Of Strrtwstg, Strtwstg, Rrtwstg and Control batch on Overall Playing Ability using Analysis Of Variance

Mean	STRRTWSTG	STRTWSTG	RRTWST G	CG	SOV	SOS	Df	M S	F-value
beforetest	4.56	4.51	4.41	4.29	BG	0.839	3	0.28	0.93
					WG	22.74	76	0.29	
after-test	7.04	6.23	5.09	4.41	BG	82.30	3	27.43	66.67*
					WG	31.27	76	0.41	

At the level of confidence ie. 0.05, derived 'F' ratio value of 66.67* total playing ability was larger than the needed table value of 2.73 for degrees of freedom 3 and 76.

CONCLUSION

The specifically selected performance variables of basketball players (flexibility, muscular strength endurance, and skill performance variable (overall playing ability)) have all been significantly improved by periodized Transient resistance and regular resistance exercise with skill training, Transient resistance and regular resistance training with skill training with skill training. Basketball players' skill performances and the improvement of the selected performance variables were found to differ significantly between short-term and regular-term resistance training with skill training, Transient resistance training with skill training, and regular-term resistance training with skill training.

REFERENCES

1. American College of Sports Medicine. Guidelines for Exercise Testing and Prescription for Children, the Elderly, and Pregnancy. Philadelphia: Williams & Wilkins, 1995.
2. Baechle, T. Essentials of Strength Training and Conditioning. Champaign, IL: Human Kinetics, 1994.
3. Berger, B.G., and A. McInman. Exercise and the quality of life. In: Handbook of Research on Sport Psychology. R.N. Singer, M. Murphey, and L.K. Tennant (Eds.). New York: Macmillan, 1993, pp. 729-760.
4. Blanksby, B., and J. Gregor. Anthropometric, strength and physiological changes in male and female swimmers with progressive resistance training. *Aust. J. Sport Sci.* 1:3-6, 1981.
5. Blimkie, C.J.R., J. Martin, J. Ramsay, D. Sale, and D. MacDougall. The effects of detraining and maintenance weight training in boys on strength development in prepubertal boys. *Abstract. Can. J. Sport Sci.* 14:102P, 1989.
6. Blimkie, C.J.R. Resistance training during pre and early puberty: Efficacy, trainability, mechanisms, and persistence. *Can. J. Sport Sci.* 17:264-279, 1992.
7. Blimkie, C.J.R. Resistance training during preadolescence: issues and controversies. *Sports Med.* 15:389-407, 1993.
8. Faigenbaum, A.D., W.L. Wescott, R.L. Loud, and C. Long. The effects of different resistance training protocols on muscular strength and endurance development in children. *Pediatrics* 104: 1/e 5n, 1999.

9. Faigenbaum, A.D., W.L. Westcott, L. Micheli, A. Outerbridge, C. Long, R. La-Rosa Loud, and L. Zaichkowsky. The effects of strength training and detraining on children. *Med. Sci. Sports Exerc. Suppl.* 27:S115, 1995.
10. Faigenbaum, A.D., L.D. Zaichkowsky, W.L. Westcott, L.J. Micheli, and A.F. Fehlandt. The effect of a twice-a-week strength training program on children. *Pediatr. Exerc. Sci.* 5:339-46, 1993