EFFECT OF GAME SPECIFIC TRAINING AND VISION TRAINING ON SELECTED STRENGTH VARIABLES AMONG TENNIS PLAYERS

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ABSTRACT

The purpose of the study was to find out the effect of game specific training and vision training on selected strength variables among tennis players. To achieve the purpose of the present study, Forty five male tennis players were randomly selected from Tiruvannamalai district, Tamilnadu, were randomly selected their age ranged between 18 to 25 years. The groups were assigned as Experimental Group I, Experimental Group II and Experimental Group III in an equivalent manner. Experimental Group I was exposed to game specific training, Experimental Group II was exposed to vision training and Experimental Group III was exposed to combined training. The duration of experimental period was 12 weeks. Analysis of Covariance (ANCOVA) was used to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, scheffe's post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses. The combined training had registered significant improvement on selected strength variables namely explosive strength and strength endurance than the other two experimental groups.

KEYWORDS: Game Specific, Vision Training, Strength, Tennis.

INTRODUCTION

Vision is the first step of information processing and visual skills can improve learning. A number of abilities are not only significance of sport, but that some are found at a higher level in athletes than non athletes. Time and patience are necessary for the significance of sports vision to be reorganized by every individual participating in sports, whether amateur or professional in reorganized athletes or recreational sports (Kluka, 1996). The idea of sports vision as a separate discipline dates back more than a century to 1886, when Sears, Roebuck and Co offered the first sports spectacles for sale. Spectacles advocated for sport gave wide and uninterrupted fields of view and were fitted with 'Salvoc' safety lenses (until then only glass lenses had been available). The safer CR39 plastic lenses became commercially available in 1972. With the advent of the more impact-resistant polycarbonate lenses in the mid-1980s, sports spectacles were able to give better protection and misting up became less of a problem. Everyone is constantly on the lookout for an 'edge' in sport and, since vision is extremely important (over 80% of perceptual input is visual (Ariel, 2005).

Sports vision is not really new, it is possible that from the very beginning athletes tried to keep their eyes on the ball, or on whatever object required visual attention. They probably did so in a crude sort of way, and the very first coaches may have handled out similar advice. The fields of sports vision as a science, as a discipline, or as a specialty whichever is appropriate has not yet reached the point where it can be defined precisely. Theory research and clinical application cannot yet be put together in a neat package. Evidence of that is very clear when reviewing research studies of the subject and evaluating the reports of practitioners who have worked with athletes most find a relatively small correlation between spots performance and specific visual skills, and make a strong point that further study is necessary.

Tennis is a racket sport that can be played individually against a single opponent (singles) or between two teams of two players each (doubles). Each player uses a tennis racket that is strung with cord to strike a hollow rubber ball covered with felt over or around a net and into the opponent's court. The object of the game is to play the ball in such a way that the opponent is not able to play a valid return. The player who is unable to return the ball will not gain a point, while the opposite player will. Tennis is played by millions of recreational players and is also a popular worldwide spectator sport. The four Grand Slam tournaments (also referred to as the Majors) are especially popular: the Australian Open played on hard courts, the French Open played on red clay courts, Wimbledon played on grass courts, and the US Open also played on hard courts.

METHODOLOGY

The purpose of the study was to find out the effect of game specific training and vision training on selected strength variables among tennis players. To achieve the purpose of the present study, Forty five male tennis players were randomly selected from

Tiruvannamalai district, Tamilnadu, were randomly selected their age ranged between 18 to 25 years. The groups were assigned as Experimental Group I, Experimental Group II and Experimental Group III in an equivalent manner. Experimental Group I was exposed to game specific training, Experimental Group II was exposed to vision training and Experimental Group III was exposed to combined training. The duration of experimental period was 12 weeks. Analysis of Covariance (ANCOVA) was used to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, scheffe's post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses.

RESULTS

TABLE - I
COMPUTATION OF ANALYSIS OF COVARIANCE OF MEAN OF GAME SPECIFIC TRAINING, VISION TRAINING AND COMBINED TRAINING GROUP ON EXPLOSIVE STRENGTH

	GSTG	VTG	CGSVTG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	30.31	30.28	31.01	BG	1.19	2	0.59	0.83
				WG	30.22	42	0.72	
Post-Test Means	33.72	33.86	35.82	BG	79.37	2	39.68	122.48*
				WG	13.60	42	0.32	
Adjusted Post-Test Means	33.71	33.84	35.80	BG	78.65	2	39.32	118.65*
				WG	13.58	41	0.33	

An examination of table - I indicated that the pre test means of game specific training, vision training and combined training group were 30.31, 30.28 and 31.01 respectively. The obtained F-ratio for the pre-test was 0.83 and the table F-ratio was 3.22. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 42. This proved that there were no significant difference between the experimental and combined training group indicating that the process of randomization of the groups was perfect while assigning the subjects to groups.

The post-test means of the game specific training, vision training and combined training group were 33.72, 33.86 and 35.82 respectively. The obtained F-ratio for the post-test was 122.48 and the table F-ratio was 3.22. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 42. This proved that the differences between the post test means of the subjects were significant.

The adjusted post-test means of the game specific training, vision training and combined training group were 33.71, 33.84 and 35.80 respectively. The obtained F-ratio for the adjusted post-test means was 118.65 and the table F-ratio was 3.23. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 41. This proved that there was a significant difference among the means due to the experimental trainings on explosive strength.

TABLE - II
THE SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN THE ADJUSTED POST TEST PAIRED MEANS ON EXPLOSIVE STRENGTH

Adjusted Post-test means			Mean Difference	Required CI
GSTG	VTG	CGSVTG		
33.71	33.84	---	0.13	
33.71	---	35.80	2.09*	0.53
---	33.84	35.80	1.96*	

* Significant at 0.05 level of confidence

The multiple comparisons showed in Table II proved that there existed significant differences between the adjusted means of vision training with combined training group (2.09), game specific training with combined training group (1.96). There was no significant difference between game specific training and vision training (0.13) at 0.05 level of confidence with the confidence interval value of 0.53.
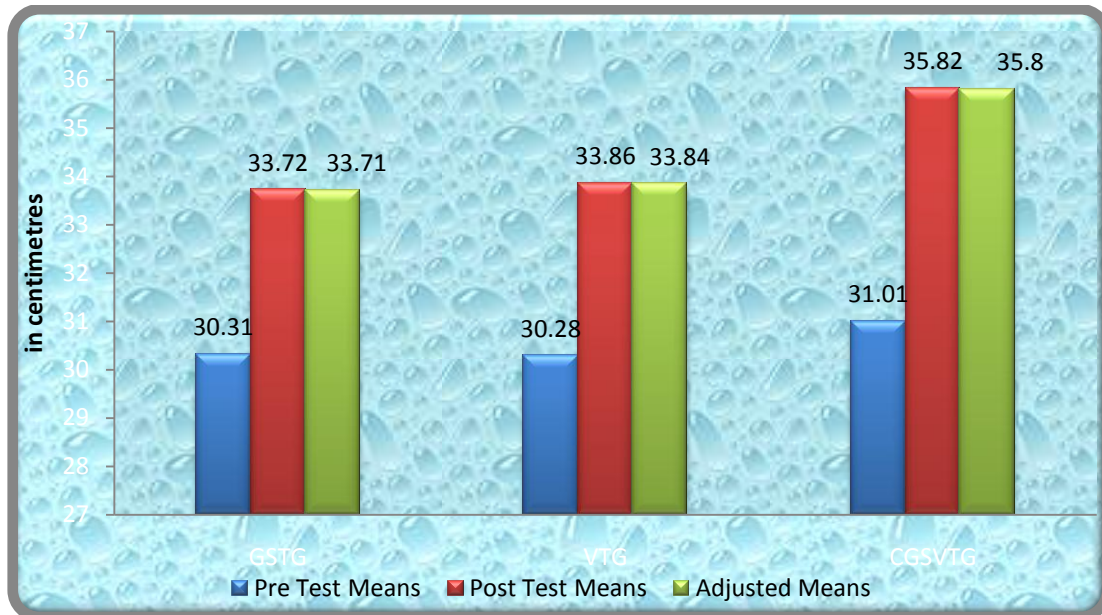

FIGURE - 1

**PRE POST AND ADJUSTED POST TEST DIFFERENCES OF THE,
GAME SPECIFIC TRAINING, VISION TRAINING
AND COMBINED TRAINING GROUP ON
EXPLOSIVE STRENGTH**

TABLE-III
**COMPUTATION OF ANALYSIS OF COVARIANCE OF MEAN OF GAME SPECIFIC TRAINING, VISION
TRAINING AND COMBINED TRAINING GROUP
ON STRENGTH ENDURANCE**

	GSTG	VTG	CGSVTG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	25.54	25.33	25.77	BG	0.006	2	0.003	0.20
				WG	0.58	42	0.01	
Post-Test Means	29.33	28.76	31.22	BG	0.70	2	.35	37.03*
				WG	0.39	42	0.009	
Adjusted Post-Test Means	29.33	28.75	31.21	BG	0.69	2	0.34	35.74*
				WG	0.39	41	0.01	

An examination of table - III indicated that the pre test means of game specific training, vision training and combined training group were 25.54, 25.33 and 25.77 respectively. The obtained F-ratio for the pre-test was 0.20 and the table F-ratio was 3.22. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 42. This proved that there were no significant difference between the experimental and combined training group indicating that the process of randomization of the groups was perfect while assigning the subjects to groups.

The post-test means of the game specific training, vision training and combined training group were 29.33, 28.76 and 31.22 respectively. The obtained

F-ratio for the post-test was 37.03 and the table F-ratio was 3.22. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 42. This proved that the differences between the post test means of the subjects were significant.

The adjusted post-test means of the game specific training, vision training and combined training group were 29.33, 28.75 and 31.21 respectively. The obtained F-ratio for the adjusted post-test means was 35.74 and the table F-ratio was 3.23. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 41. This proved that there was a significant difference among the means due to the experimental trainings on strength endurance.

TABLE - IV
THE SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN THE ADJUSTED POST TEST PAIRED MEANS ON STRENGTH ENDURANCE

Adjusted Post-test means			Mean Difference	Required CI
GSTG	VTG	CGSVTG		
29.33	28.75	---	0.58	
29.33	---	31.21	1.88*	0.79
---	28.75	31.21	2.46*	

* Significant at 0.05 level of confidence

The multiple comparisons showed in Table IV proved that there existed significant differences between the adjusted means of vision training with combined training group (1.88), game specific training with combined training group (2.46). There was no significant difference between game specific training and vision training (0.58) at 0.05 level of confidence with the confidence interval value of 0.79.
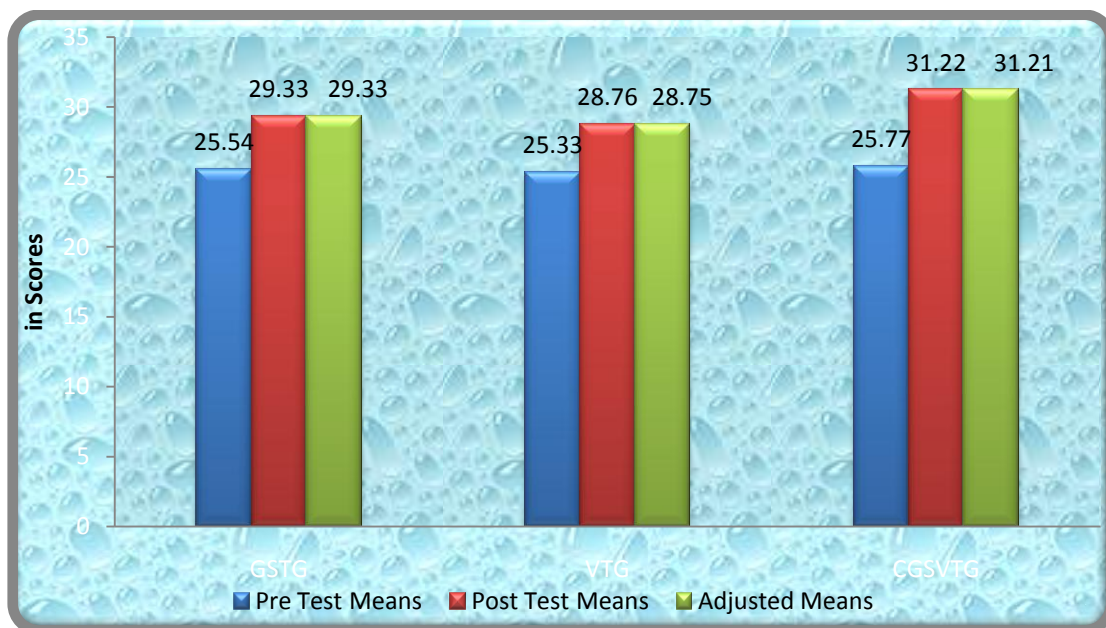

FIGURE - 2

PRE POST AND ADJUSTED POST TEST DIFFERENCES OF THE, GAME SPECIFIC TRAINING, VISION TRAINING AND COMBINED TRAINING GROUP ON STRENGTH ENDURANCE

CONCLUSION

From the analysis of the data, the following conclusions were drawn:

1. The game specific training had registered significant improvement on selected strength variables namely explosive strength and strength endurance after undergoing game specific training for a period of twelve weeks.
2. The vision training had registered significant improvement on selected strength variables namely explosive strength and strength endurance after undergoing vision training for a period of twelve weeks.
3. The combined training had registered significant improvement on selected strength variables namely explosive strength and strength endurance after undergoing combined training for a period of twelve weeks.
4. The combined training had registered significant improvement on selected strength variables namely explosive strength and strength endurance than the other two experimental groups.

REFERENCES

1. Asuman Sahan & K. Alparslan Erman (2009). The Effect of the Tennis Technical Training on Coordination Characterictics. *The Open Sports Medicine Journal*, 3, 59-65.
2. Baiget, E., Fernandez-Fernandez, J., Iglesias, X. & Rodriguez, F.A. (2015). Tennis Play Intensity Distribution and Relation with Aerobic Fitness in Competitive Players. *PLoS ONE* 10(6): e0131304.
3. *Barber-Westin, S.D., Hermet, A. & Noyes, F.R. (2015) A Six-Week Neuromuscular and Performance Training Program Improves Speed, Agility, Dynamic Balance, and Core Endurance in Junior Tennis Players. J Athl Enhancement 4:1.*
4. Barrow, M. H., & McGee, R. (1979). *A Practical approach to Measurement in Physical Education.* Philadelphia: Lea & Febiger.
5. Baumgartner, T, A., Andrew, S. J., Matthew, T. M., & David, A. R. (2003). *Measurement for Evaluation in Physical Education & Exercise Science.* New York: Mc-Graw Hill.
6. Jaime Fernandez-Fernandez, Todd Ellenbecker, david Sanz-Rivas, Alexander Ulbricht & Alexander Ferrautia (2013). Effects of A 6-Week Junior Tennis Conditioning Program on Service Velocity. *J Sports Sci Med.* 12(2): 232–239.
7. Johnson, C.A. (1986). A comparison of dynamic balance of preadolescent visually impaired and sighted males. *Completed research,* 27, 76.
8. Johnson, D.J. (1987). The role of vision in compensation for vestibular after-effects during skilled performance. *Completed Research.*30:92.
9. Justin Honda, Seung Ho Chang & Kijeong Kim (2018). The effects of vision training, neck musculature strength, and reaction time on concussions in an athletic population. *J Exerc Rehabil.* 14(5): 706–712.
10. Suarez Rodríguez, D. & Del Valle Soto, M. (2017). A study of intensity, fatigue and precision in two specific interval trainings in young tennis players: high-intensity interval training versus intermittent interval training. *BMJ Open Sport & Exercise Medicine,* 3.
11. Suresh, K. M. (2011). Impact of Sport Vision Training for Enhancing Selected Visual Skills and Performance Factors of Novice Hockey Players. *Indian Journal of Movement Education and Exercises Sciences (IJMEES), Bi-annual Refereed Journal.* Vol. I No. 1.
12. Terraza-Rebollo, M., Baiget, E., Corbi, F. & Planas Anzano, A. (2017). Effects of Strength Training on Hitting Speed in Young Tennis Players. *Revista Internacional de Medicina y Ciencias de la Actividad Física y el Deporte.* 17 (66). 349-366.

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