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Relative effect of SAQ and hill training on speed and agility among men Kabaddi players living at moderate altitude

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Abstract

The purpose of the study was to find out the, relative effect of 12 weeks SAQ and Hill training on speed and agility among men kabaddi players living at moderate altitude. To achieve the purpose of the study, thirty six men kabaddi players from government degree college Kulgam and government degree college larnoo Anantanag, Jammu and Kashmir, state was selected as subjects. The selected subjects were randomly divided into three groups and each group contains 12 subjects. Group I acts as experimental group (SAQ training) group II acted as experimental group II (Hill training) and group third acts as control group. The age of the subjects were ranged from 19 to 23 years and which was confirmed from the college record. All the subjects were selected from moderate altitude only (1524 - 2438 m) above the sea level. The Two experimental groups attended 12 weeks SAQ and Hill training, where as the control group did not given any kind of training expect their daily activities. Experimental group I go through SAQ training for three days per week in 12 weeks training programme and experimental group II goes through Hill training three days per week for the period of 12 weeks of training program. Pre test data was collected before one day of training programme and post test data was collected after end of 12 weeks training programme. The analysis of covariance (ANCOVA) was used to find the significant difference among the groups. The scheffe's post hoc test was used to find out the paired mean difference if any. The level of confidence was fixed at 0.05. It was concluded that there was a significant improvement on selected variables due to SAQ training and Hill training of 12 weeks.

Keywords: SAQ training, Hill training, speed, agility, moderate altitude and kabaddi players

Introduction

The training is the process of preparing an individual for any event or an activity or job. Usually in sports we use the term sport training which denotes the sense of preparing sportsperson for the highest level of performance. But these days' sports training are not just a team but it is very important subject that affects each and every individual who takes physical activity or sports either for health and fitness or for competition at different level. It comprises all those learning influence and processes, including self tuition by the athlete, which are aimed improving performance (Ajmer Singh, 2016) ^[1].

Physical training is one of the most important ingredients in training to achieve high performance. The objectives of physical training are to increase the athlete's physiological potential and develop biometry abilities to the highest standard (Bompa and G.haff, 2009) ^[2].

Speed, agility and quickness training can cover the complete spectrum of training intensity, from low to high intensity. Every individual will come into a training program at a different level; thus training intensities must coincide with the individual's abilities. Low intensity speed, agility and quickness drills can be used by everyone for different applications. No significant preparation is needed to participate at this level of speed, agility and quickness training. Higher intensity drills require a significant level of preparation. A simple approach to safe participation and increased effectiveness is to start concurrent strength training program when starting speed, agility and quickness training (Brown, Ferrigno & Santana, 2000) ^[4].

Hill training is a highly specific form of strength resistance training that has many benefits for the endurance runner including improvements in stride frequency and length, muscle strength and power,

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neuromuscular co-ordination, running economy, fatigue resistance, muscular endurance, speed, aerobic and anaerobic power and protects leg muscle-fibers against damage and delayed onset muscle soreness (DOMS). Research has shown that high intensity hill running leads to a greater level of muscle fiber activation and recruitment in a number of muscle groups compared with running on a level slope (Sloniger 1997)^[3].

Methodology

The purpose of the study was to find out the, relative effect of 12 weeks SAQ and Hill training on speed and agility among men kabaddi players living at moderate altitude. To achieve the purpose of the study, thirty six male kabaddi players from government Degree College Kulgam and government degree college larnoo Anantanag Jammu and Kashmir were selected as subjects. The age of the subjects was ranged from 19 to 23 years and all the subjects were selected from moderate altitude level. The selected subjects were randomly assigned into three equal groups of 12 subjects each. Group I performed SAQ training programme for three days per week for twelve weeks, group II performed Hill training for three days per week for twelve weeks and group III acts as control group which did not participate in any special training programme apart from the regular activities as per the curriculum. All the subjects were informed about the nature of the study and their consent was obtained to co-operate till the end of the experiment and testing period. All the selected

subjects of three groups were tested on selected variables at prior to and immediately after the training programme. The analysis of covariance (ANCOVA) was used to analyze the significant difference, if any among the groups. Since, three groups were compared, whenever obtained “F” ratio for adjusted post test was found to be significant, the scheffe’s test was applied to find out the paired mean difference if any. The 0.05 level of confidence was fixed as the level of significance to test the “F” ratio obtained by the analysis of covariance, which was considered as an appropriate.

Selections of Tests

Table 1

S. No	Variables	Test Items	Unit of measurement
1	Speed	50 meters dash	seconds
2	Agility	Shuttle run	seconds

Analysis of Data

The relative effect of 12 weeks SAQ and Hill training on speed and agility among men kabaddi players living at moderate altitude were analyzed separately and presented below.

Speed

The analysis of covariance on speed of the pre and post scores of SAQ training group, Hill training group and control group have been analyzed and presented in table II.

Table 2: Analysis of covariance for the pre and post tests on speed of SAQ training group, Hill training group and control group

Test	Saq Group	Hill Group	Control Group	SOV	SS	DF	MS	F
Pre test Mean	7.71	7.75	7.75	BG	0.012	2	0.006	3.14
SD(±)	0.05	0.034	0.039	WG	0.063	33	0.002	
Posttest Mean	7.54	7.65	7.79	BG	0.39	2	0.19	83.005*
SD(±)	0.05	0.049	0.048	WG	0.07	33	0.002	
Adjusted Post test Mean	7.56	7.63	7.79	BG	0.30	2	0.15	120.8*
				WG	0.04	32	0.001	

(The table values required for significance at 0.05 level of confidence foe 2 and 33 and 2 and 32 are 3.29 and 30.30 respectively).

As shows in table II, the pre test mean on speed of SAQ training group is 7.71 with standard deviation ±0.053, Hill training group is 7.75 with standard deviation ±0.034 and control group is 7.75 with standard deviation ±0.039. The obtained F ratio 3.14 is less than the table value 3.29required for df 2 and 33 at 0.05 level of significance. It is inferred that there is statistically no significant variation among experimental groups and control group before the commencement of training programme.

The result presented in table II shows that the post test mean on speed of SAQ training group is 7.54 with standard deviation ± 0.05, Hill training group 7.65 with standard deviation ± 0.049 and control group7.79 with standard

deviation ± 0.048. The obtained F ratio of 83.005 arrived at by the statistical calculation is higher than the table value of 3.29 required for df 2 and 33at 0.05 level of significance. It reveals that two experimental groups have demonstrated significant variations on speed at the end of training programme.

The adjusted post mean on speed of SAQ training group is 7.56, Hill training group is 7.63 and control group is 7.79. The obtained F ratio of 120.8 is higher than the table value of 3.30 required for df 2 and 32 at 0.05 level of significance. It was found that significant difference exist among three groups on speed after adjusting the initial mean difference on the post test mean.

In order to determine which of the paired means have significant difference, Scheffe’s test was computed and it is presented in table II.

Table 2: The scheffe’s test for the difference between paired means on speed

SAQ Group	Hill Group	Control Group	Mean Difference	CI
7.56	7.63		0.07*	0.03
7.56		7.79	0.23*	0.03
	7.63	7.79	0.16*	0.03

As examination of the table II which indicates that the adjusted post test mean difference on speed between SAQ training group and Hill training group and between SAQ training group and control group and Hill training group and

control training group are 0.07, 0.23 and 0.16 respectively, which are higher than the confidence interval value of 0.03 at 0.05 level of significance.

It is inferred that the twelve training of SAQ training and Hill

training have significantly improved speed in two experimental groups as compared to the control group. Table-II also shows the mean difference between SAQ training group and Hill training group is 0.07 which are more than the confidence interval value 0.03 at 0.05 level of significance. That result reveals that the SAQ training has show more

significant improvement in speed as compared to the Hill training.

The pre, post and adjusted post test of SAQ training group, Hill training group and Control training group on Speed were graphically represented to the figure I.

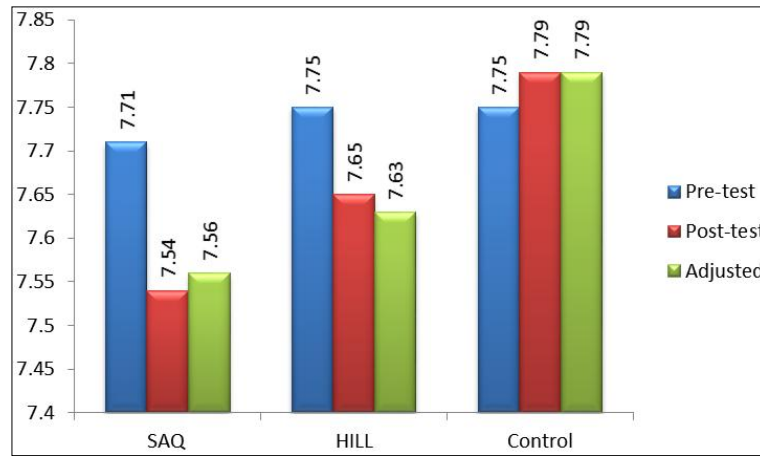


Fig 1

Agility

The analysis of covariance on Agility of the pre and post

scores of SAQ training group, Hill training group and control group have been analyzed and presented in table III

Table 3: Analysis of covariance for the pre and post tests on Agility of SAQ training group, Hill training group and control group

Test	Saq Group	Hill Group	Control Group	SOV	SS	DF	MS	F
Pre test	16.83	16.77	16.87	BG	0.054	2	0.027	0.052
Mean SD(±)	0.76	0.69	0.70	WG	17.18	33	0.521	
Posttest	16.09	16.48	16.87	BG	3.65	2	1.82	4.53*
Mean SD(±)	0.52	0.66	0.70	WG	13.32	33	0.40	
Adjusted	16.09	16.52	16.84	BG	3.41	2	1.70	22.25*
Post test Mean				WG	2.45	32	0.07	

(The table values required for significance at 0.05 level of confidence foe 2 and 33 and 2 and 32 are 3.29 and 30.30 respectively).

As shows in table III, the pre test mean on speed of SAQ training group is 16.83 with standard deviation ±0.76, Hill training group is 16.77 with standard deviation ±0.69 and control group is 16.87 with standard deviation ±0.70 The obtained F ratio 0.052 is less than the table value 3.29 required for df 2 and 33 at 0.05 level of significance. It is inferred that there is statistically no significant variation among experimental groups and control group before the commencement of training programme.

The result presented in table III shows that the post test mean on speed of SAQ training group is 16.09 with standard deviation ± 0.52, Hill training group 16.48 with standard

deviation ± 0.66 and control group 16.87 with standard deviation ± 0.70. The obtained F ratio of 4.53 arrived at by the statistical calculation is higher than the table value of 3.29 required for df 2 and 33at 0.05 level of significance. It reveals that all three groups have demonstrated significant variations on speed at the end of training programme.

The adjusted post mean on speed of SAQ training group is 16.09, Hill training group is 16.52and control group is 16.84. The obtained F ratio of 22.25 is higher than the table value of 3.30 required for df 2 and 32 at 0.05 level of significance. It was found that significant difference exist among three groups on speed after adjusting the initial mean difference on the post test mean. In order to determine which of the paired means have significant difference, Scheffe’s test was computed and it is presented in table IV.

Table 4: The scheffe’s test for the difference between paired means on Agility

Saq Group	Hill Group	Control Group	Mean Difference	CI
16.09	16.52		0.43*	0.27
16.09		16.84	0.75*	0.27
	16.52	16.84	0.32*	0.27

As examination of the table IV which indicates that the adjusted post test mean difference on speed between SAQ training group and Hill training group and between SAQ training group and control group and Hill training group and control training group are 0.43, 0.75 and 0.32 respectively, which are higher than the confidence interval value of 0.27 at 0.05 level of significance.

It is inferred that the twelve weeks of SAQ and Hill training have significantly improved speed in two experimental groups as compared to the control group. Table –VI also shows the mean difference between SAQ training group and Hill training group is 0.43 which are more than the confidence interval value 0.27 at 0.05 level of significance. That result reveals that the SAQ training has show more significant

improvement in agility as compared to the Hill training. The pre, post and adjusted post test of SAQ training group, Hill training group and Control training group on agility were graphically represented to the figure II.

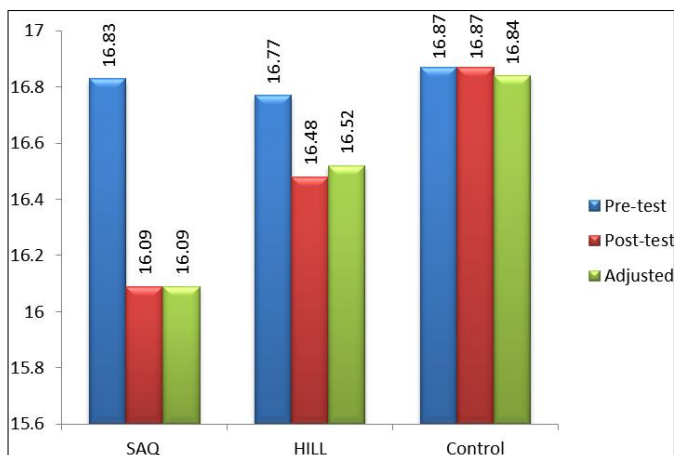


Fig 2

Discussion on Findings

The result of the study shows, that there was significant improvement on selected dependent variables namely, speed and agility, due to 12 weeks of SAQ and Hill training. It was also found that improvement caused by SAQ training was better than hill training. The findings of the study are also agree with the findings of G.Velmurugan and A.Palanisamy (2013) [5] Conducted a study to find out the effects of SAQ training and plyometric training on speed among college men kabaddi players. However, the improvement on speed was better in SAQ training group when compared to plyometric training group.

Conclusion

1. A significant difference was found between SAQ training group, Hill training group and control group in improving the speed and agility of kabaddi players living at moderate altitude.
2. A significant difference was found between SAQ training group, Hill training group in improving the speed and agility of kabaddi players living at moderate altitude.
3. SAQ training was better as compared to Hill training in improving the speed and agility of kabaddi players living at moderate altitude.

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