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Effect of Plymetric Training on Leg Expolsive Power and Speed on Very High-Altitude Hilly Areas and Low Altitude Plan Areas Transhimalayan of Ladakh Regoin Athlets

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Abstract

The goal of the study was to analysis the effect of high and low altitude plyometrics on vertical jump and speed. The total 48 male athletes age group 18 to 21 years was selected from school and college and university of ladakh for high altitude hilly area group. Low altitude plan area group and control hilly area and plan area group had endured a 6-week polymetric training protocol overall similar exercise. Performance on sergeant jump and 50 -yard dash was measured pre and post treatment conditions. ANCOVA was display to study among the group. result show that high and low altitude area polymetric training both significantly improved the performance in vertical jump and speed of athletics. no significant differentiation was quiet while weigh up between two type of training method.

Key words: high and low altitude training polymetric, vertical jump and speed.

I. INTRODUCTION

Polymetric is specific as a quick capable movement compelling an eccentric contraction, followed instantly by an explosive concentric contraction. This process is also known as the stretch -shortening cycle. plyometric exercise invokes the elastic properties of the muscle fibres and connected tissue in a way that allows the muscle to store energy during the eccentric phase and discharge that energy during the concentric period. Polymetric training has the potential to establish quicker reaction times and speed and can better performance in explosive sports like athletics, tennis. football, volley ball basketball etc.

Various perquisite of plyometric training it is also sharp that high intensity land based polymetric have possible acute muscle soreness, muscle damage, or even musculoskeletal injuries. since the land plyometric may Couse injury to the performer. low altitude area plyometrics training become alternative training model to improve athletic performance. there is limited research that compared the effects high and low altitude areas plyometric training.

OBJECTIVES

Objective of the investigate was to catch out the effects of high and low altitude plyometric training on vertical jump and speed and to match the boost of each training method.

II. METHODOLOGY

Forty-eight male athletes of a school constituent's college and university of Ladakh participated in this class all athletes had minimum 4-5 years of training age and was devoid of any cramp. all the subject planned to follow strictly the exercise schedule the Colleges.

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Experimental Design.

Pre-test post-test randomized group design was committed for all study. subject was randomly branched in to three equal group high altitude area group low attitude area group and control. vertical jump and speed measurement were taken prior to and after one week of polymetric intervention.

Procedure.

A six-week plyometric training Plan was advanced following the foundation as applied by Miller et al. (2007) using related drills, set, and repetitions. High altitude athletes' group and low altitudes athletes' group were supported 6 weeks of plyometric training (two day - Saturday and Wednesday per week) with their expected athletic training whereas control group participated only in their anticipated athletic training. plyometrics were accomplished two times per week to allow for satisfactory recovery plyometric training groups were trained together twice per week, all over the treatment phase. During training all the subject were under direct procedure and instruction of the researcher. leg explosive power and speed were deliberate one week prior to and after 6-week plyometric training for all the triple groups. Leg explosive power was measured by sergeant jump test. speed was deliberate by 50-yard dash and the unit yard /second was converted to m/s

Results

Table 1: Six Weeks Plyometric Training convention

Training weeks	Training volume	Plyometric drill	Set x Repetition	Training intensity
1	90	Oblique to oblique ankle hops	2 x16	Low
		Standing jump and reach	2x16	low
		Front cone hops	6x5	low
2	120	oblique to oblique ankle hops	2x16	low
		Standing long jump	2x16	low
		Side jump over barrier	6x5	Medium
		both leg hops	10x4	Medium
3	120	Oblique to Oblique ankle hops	2x14	low
		existing long jump	2x14	low
		side jump over barrier	6x4	Medium

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		Both leg hops	8x3	Medium
		side cone hops	2x14	Medium
4	140	One leg bounding	2x12	High
		Standing long jump	3x12	low
		side jump over barrier	8x4	Medium
		Side cone hops	3x10	Medium
		Tuck jump with knees up	4x6	Medium
5	140	one leg bounding	2x10	high
		Jump to box	2x10	low
		two leg hop	6x3	Medium
		side cone hops	2x12	medium
		Tuck jump over barrier	3x10	high
		Tuck jump over barrier	6x5	high
6	120	Jump to box	2x10	Low
		Dept jump to prescribed height	4x6	Medium
		two leg jump	6x4	Medium

Table 2: ANCOVA on Vertical jump Presentation .

Mean	**High altitude area group**	**Low altitude area group**	**control**	**F ratio**
Pre -test mean(cm)	45.938±6.148	46.125±5.390	46.25±6.914	0.01
post -test mean (cm)	51.313±6.041	52.313±5.862	48.563±7.580	1.410
Adjusted -post-test mean (cm	51.477	52.292	48.419	11.41∗ F=3.21 (2,44)

Significant at 0.05 level 0.05 level of Significance

Table -2 shows which proficient is a significant difference among all the class on vertical jump performance since the obtained F value of adjusted post-test means 11.41 greater than the prescribed f value 3.21 at 0.05 level of significance.

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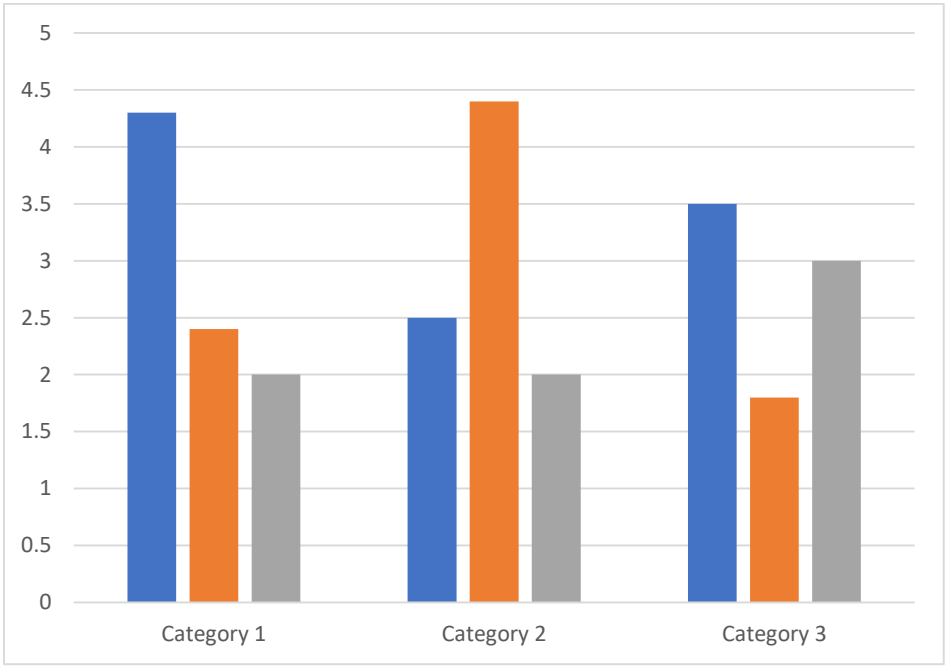
Table no 3: Computation of LSD for Vertical Jump Performance

Means			C.D
High altitude Group	Low altitude Group	Control	
50.477	52.292		1.727
50.477		48.420	1.727
	52.291	48.420	1.727

Significance at 0.05 level of significance

Table -3 shows that performance of high altitude group and low altitude group is significantly improved than the control. Such result was collected because of the treatment imparted for 6 weeks.

Vertical jump (cm)



Pre Test. Post Test. Adj Post Test .

1. Blue >high altitude group
2. Orange >low altitude group
3. silver >control group

Fig 1- Comparison between high altitude and low altitude Group and Control in Pre , Post and adjusted Post Test means.

Table 4 : ANCOVA on 50 yard Dash.

means	**High altitude group**	**Low altitude group**	**Control**	**F ratio**
Pre -test Mean(m/s)	6.789 -	6.874 ±0.0260	6.824 ±0.300	o.54

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Post -test Mean (m/s)	6.975 ±0.251	7.106 ±0.289	6.937 ±0.278	1.66
Adjusted post-test means (m/s)	7.017	7.055	6.946	5.87* F=3.20 (243)

***Significant at 0.05 level of significance**

Table -4 display that there is significant difference between all the group on 50 yard Yard dash performance the collected F value from adjusted post test means 5.87 greater than the required F value 3.20 at 0.05

Table -5 : Computation of LSD for 50 yard Dash

MEANS				
High altitude Group	**Low altitude Group**	**Control**	**Mean Difference**	**C.D.**
7.018	7.056		0.038	0.066
7.018		6.946	0.072*	0.066
	7.056	6.946	0.110*	0.066

*Significant at 0.05 level of significance

Table no 5 presentation that the achievement of high altitude and low altitude group was significantly improved than the control and such was collected because of the 6 weeks treatment imparted on them.

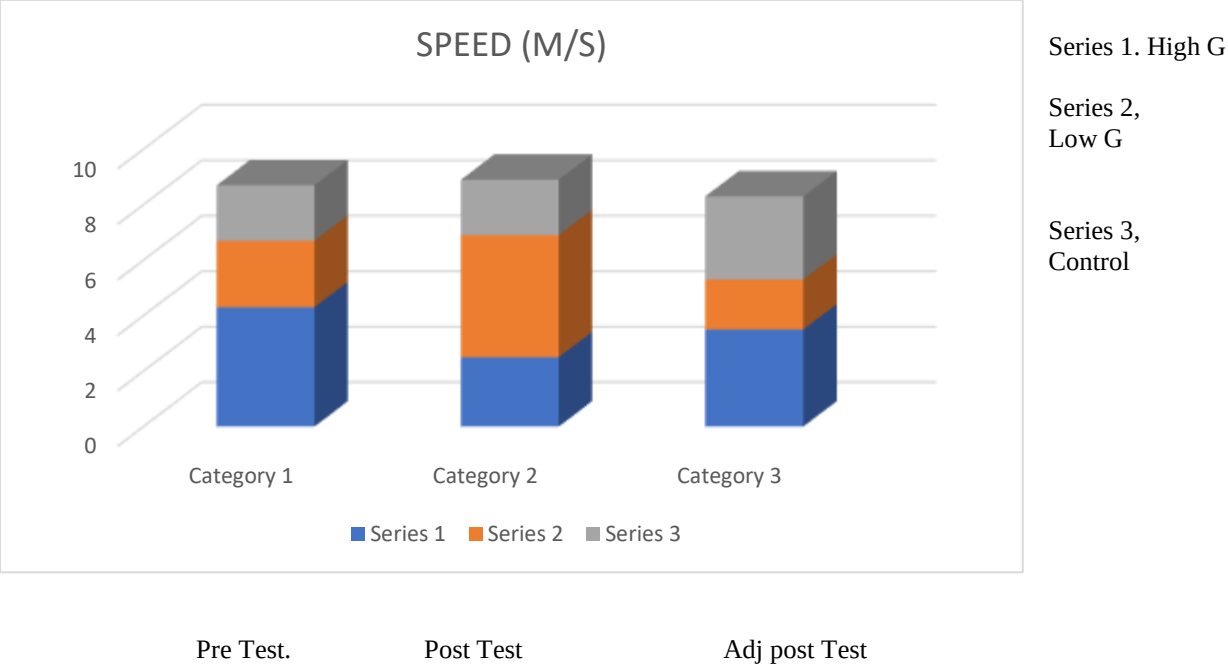

Fig :2- comparison between High and Low Group and control in Pre ,Post and adjusted Post test means .

Discussion

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In the vertical jump test the pair experiment group strengthen leg explosive power crucailly . the growth of high polymetric Group is 10.70% ($p<0.05$),whereas the growth low altitude Group is 12.415%($p<0.01$). It present that the pair high and low polymetric training were sufficient to demand a training motivation for vertical leg explosive power ,upon the athletes but no significant change was set up in between them . finding of the current study are in compliance with the HPT and LPT provisional studies of Robinson et.al (2004).Bavli (2012) and Arazi et .al .(2012 for vertical jump .Robinson et al.(2004) related the effect of eight weeks APT versus LPT on VJ in healthy women . the study create broad development in V j performance in both APT -and LPT -experiment groups of same magnitude , without any significant difference among them .Bavli (2012) studied the comparative effect of land and aquatic polymetric training on adolescent volley ball players .after 12 week plyometric training both the high and low plyometric training significantly enhanced vertical leg explosive power with no significant difference between them .Arazi et.al.(2012) matched the effect of 8 week land and aquatic polymetric training on vertical jump of semi professional basketball players .Both the empirical groups shown significant enhancement in comparison to control ,but distinction between them was not statistically significant.

Conclusion

On the support of the collected result ,the following conclusion may be drawn:

1. six weeks of plyometric training is helpful to improve jump of the athletes
2. high altitude plyometrics may be as useful as low altitude plyometrics for developing vertical jump of the athletes
3. six week of plyometric training is acceptable enough to improve the speed of the athletes

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