

Effects of Cloistered and Coalesced Power Yoga and Plyometric Training on Blood Sugar and Urea in Tribal Taekwondo Athletes

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ABSTRACT

The participants were Tribal Taekwondo athletes, and the researchers wanted to see what kind of effect Power Yoga and Plyometric Training had on their blood glucose and urea levels when they were Cloistered and Coalesced. This goal will be reached by recruiting 60 (N=60) female Tribal Taekwondo athletes from different schools across Kerala. Between 14 and 16 years old, their ages spanned a wide range. The 15 participants were divided at random into four groups. The first group did Power Yoga, the second did Plyometrics, the third did a combination of the first two, and the fourth served as a control. The blood glucose and urea concentration were selected as dependent variables and evaluated. Analysis of Covariance was used to statistically analyze the data obtained from the four groups before and after the training programme on the selected criterion variables (ANCOVA). Post hoc Scheffe's test was used to determine among the paired mean differences which were more prominent whenever the 'F' ratio for adjusted post-test means was found to be prominent. For the most part. The doubtless threshold was set at .05. The speed of the experimental groups that participated in either power yoga, plyometric training, or a combination of the two had significantly increased. Blood glucose and urea nitrogen levels were found to be reduced more in the pooled power yoga and plyometric training group compared to the power yoga group and the plyometric training group.

Keywords: *Power yoga, Plyometric training, Training, Sprinting, Blood sugar, Blood urea.*

INTRODUCTION

The practice of yoga is a fitness-focused, high-energy variant of the vinyasa style of yoga that has been shown to improve a wide range of health indicators. Many people dismiss power yoga as "gym yoga," but its roots are actually in the Ashtanga system. Strength and flexibility are emphasized in power yoga for the purpose of building stamina and strength in the muscles. You move rapidly from one challenging stance to the next. Power yoga courses are occasionally the same, in contrast to other yoga modes where similar positions are practiced again and over. It's a great way to get some exercise. To fully understand how power yoga works, one must get familiar with each of its constituent parts (Schubert et al., 2018).

Power yoga, a branch of the Vinyasa yoga tradition that developed from the more traditional Ashtanga yoga at the dawn of the 20th century, is becoming increasingly popular. There are many positive effects of power yoga, which stresses the flow from one posture to the other rather than bending on treating each posture alone. Ashtanga yoga is distinctive from other styles of practice because its postures are not practiced in isolation from one another. It's a high-severity, high-velocity praxis that puts in for constant movement and breathing coordination. Although focus and awareness of the breath are essential in power yoga, the practice is meant to energize rather than calm the practitioner. As stated by (Tamizhmaran and Manju Pushpa, 2020).

Plyometrics is said to be a form of workout that exploits the stretching and contracting cycles of muscle and tendon tissue. The same muscles undergo eccentric stretching and concentric contraction, includes a lot of jumping around. Plyometric training is also known as stretch-shortening drills, stretch-strengthening drills, and reactive neuromuscular training (Kisner Wilk, 1993).

Its focus on explosiveness, plyometrics is frequently cited as the link between strength training and sports performance. The purpose of this routine is to increase an athlete's capacity for explosive movement. An excellent example of how exogenous variables, such as gravity, cause muscles to stretch is mobility, which includes running, walking, and hopping in humans. The muscle is contracting eccentrically (lengthening) at this stage before beginning to contract concentrically. An eccentric action is a stretch in which the muscles play an active role. The muscle's natural function, the stretch-shortening cycle, can only be carried out by a combination of eccentric and concentric contractions. The amortization phase occurs in between each stretch and shortening cycle. By abruptly switching directions, we capitalize on the muscle's increased tension while simultaneously shortening the amortize.

Methodology

In order to accomplish this, researchers surveyed sixty (N=60) female Tribal Taekwondo athletes from various schools in Kerala. They were of ages 14 and 16 years. Randomly, each subject was divided into four categories of fifteen (n=15). The first category participated in Power Yoga, the second in Plyometrics, the third in a combination of Power Yoga and Plyometrics, and the fourth served as a control. As dependent variables, blood glucose and urea concentrations were selected. The statistical evaluation process of the pre-and post-training data on the selected criterion variables for the four categories was done on the basis of Analysis of Covariance (ANCOVA). The test of Scheffe's was utilized as a post hoc test to determine which among the paired mean differences was statistically significant when the 'F' ratio for adjusted post-test means was significant. In every circumstance. The confidence threshold was set at.05.

Analysis of the Data

Table 1 displays the outcomes of the Analysis of Covariance on Blood glucose and Urea for the Power Yoga group's pre-, post-, and adjusted test scores, the Plyometric Training group, the Coalesce Power Yoga and Plyometric Training group, and the Control group.

Table 1: Covariance analysis of some experimental group and control group variables

Dependent Variables	Test	Power Yoga group	Plyometric Training group	Coalesce Power Yoga and Plyometric Training group	Control group	Source of Variance	Sum of Squares	df	Mean Squares	F ratio
Blood Sugar	Pre-Test Mean	97.73	96.33	98.20	95.13	Between	87.25	3	29.08	1.75
						Within	930.40	56	16.61	
	Post Test Mean	85.60	85.20	83.87	95.53	Between	1299.38	3	433.13	5.33*
						Within	957.47	56	17.10	
	Adjusted Post Test Mean	84.88	85.62	82.76	96.94	Between	1703.00	3	567.67	93.99*
						Within	332.19	55	6.04	
Blood Urea	Pre-Test Mean	20.33	20.20	20.33	20.20	Between	0.27	3	0.09	0.32
						Within	15.47	56	0.28	
	Post Test Mean	17.53	16.53	14.33	20.13	Between	260.40	3	86.80	109.15*
						Within	44.53	56	0.80	
	Adjusted Post Test Mean	17.50	16.56	14.30	20.16	Between	263.05	3	87.68	115.76*
						Within	41.66	55	0.76	

* Significant at 0.05 level of confidence (Speed Scores in 1/100th of a Second),

Table value for df (3, 56) at 0.05 level = 2.76 Table value for df (3, 55) at 0.05 level = 2.78

The mean pre-test blood sugar levels for the Power Yoga category, the Plyometric Training category, the Coalesce Power Yoga and Plyometric Training category, and the Control category, respectively, are 97.73, 96.33, 98.20, and 95.13. (table 1). When comparing pre-test scores to the table value of 2.76 for degrees of freedom (3 and 56), the resulting 'F' ratio of 1.75 is insufficient for statistical significance at the 0.05 level of confidence for Blood Glucose. The average post-test blood glucose levels for the Power Yoga group, the

Plyometric Training group, the Coalesce Power Yoga and Plyometric Training group, and the Control group, respectively, are 85.60, 85.20, 83.87, and 95.53. On Blood Sugar, the post-test "F" value of 5.33 was higher than the "F" value of 2.76 for freedom degrees 3 and 56, which was needed for significance at the 0.05 confidence level. The average blood sugar levels after the test were 84.88 in the Power Yoga group, 85.62 in the Plyometric Training group, 82.76 in the Coalesce Power Yoga and Plyometric Training group, and 96.94 in the Control group. With a level of confidence of 5%, the adjusted post-test scores had an F ratio of 93.99, which was higher than the table value of 2.78 for freedom degrees between 3 and 55. The average pre-test levels of Blood Urea for the Power Yoga, Plyometric Training, Coalesce Power Yoga and Plyometric Training, and Control groups are shown in Table-1. Blood Urea failed to reach statistical significance at the 0.05 level since the pre-test 'F' ratio of 0.32 was lower than the table value of 2.76 for degrees of freedom 3 and 56. Means for post-test blood urea concentration are 17.53, 16.53, 14.33, and 20.13 for the Power Yoga, Plyometric Training, Coalesce Power Yoga and Plyometric Training, and Control groups, respectively. At the 0.05 level of significance for Blood Urea, the post-test 'F' ratio of 109.15 was higher than the table value of 2.76 for degrees of freedom 3 and 56. Means for post-test blood urea concentrations are 17.50, 16.56, 14.30, and 20.16 for the Power Yoga, Plyometric Training, Coalesce Power Yoga and Plyometric Training, and Control groups, respectively. To be statistically significant at the 0.05 level for Blood Urea, the post-test 'F' ratio of 115.76 needed to be more than the 2.78 table value, which corresponds to degrees of freedom of 3 and 55, respectively.

The study found significant changes in Blood Sugar and Urea between Power Yoga, Plyometric Training, Coalesce Power Yoga and Plyometric Training, and Control groups. Scheffe's post hoc test is used to assess which matched means have a significant difference (Table 2).

Table 2 *The results of Scheffe's test to determine whether or not there is a significant difference between the adjusted post-test paired means of dependent variables.*

Dependent Variables	Adjusted Post-test Means				Mean Difference	Confidence Interval
	Power Yoga group	Plyometric Training group	Coalesce and Plyometric Training group	Control group		
Blood	84.88	85.62			0.75	2.59
	84.88		82.76		2.12	2.59
	84.88			96.94	12.06*	2.59

Sugar		85.62	82.76		2.86*	2.59
		85.62		96.94	11.32*	2.59
			82.76	96.94	14.18*	2.59
Blood Urea	17.50	16.56			0.94*	0.92
	17.50		14.30		3.20*	0.92
	17.50			20.16	2.66*	0.92
		16.56	14.30		2.26*	0.92
		16.56		20.16	3.60*	0.92
			14.30	20.16	5.86*	0.92

* Significant at 0.05 level of confidence

As indicated in Table 2, the post-test mean differences in Blood Glucose between the Power Yoga group and the Control group, the Plyometric Training group, and the Coalesce Power Yoga and Plyometric Training group, and the Plyometric Training group and the Control group are 12.06, 2.86, 11.32, and 14.18. This disparity exceeds the 2.59 value of the 0.05 confidence level range. The post-test average variation in Blood Sugar levels between the Power Yoga and Plyometric Training categories were 0.75 and 2.12, respectively (Table-1), which are lesser than the 2.59 value of the confidence interval (at the 0.05 confidence level). After customizing for confounding variables, the results showed that the Power Yoga group had a lower blood sugar level than the Plyometric Training group.

Power Yoga and Control, Plyometric Training and Coalesce Power Yoga and Plyometric Training, Plyometric Training and Control, and Plyometric Training and Control all had significantly different blood sugar levels compared to the Control group. Finally, the researchers found no evidence of a difference in Blood glucose levels between the Power Yoga category and the Plyometric Training category or the Power Yoga, Coalesce Power Yoga, and Plyometric Training category.

After controlling for confounding variables, we found that Blood Urea levels were significantly different between the Power Yoga and Plyometric Training groups (0.94 r vs. 3.20 r), the Power Yoga and Coalesce Power Yoga and Plyometric Training groups (2.66 - 2.26 r), the Power Yoga and Control group (3.60 - 5.86 r), and the Plyometric Training and Coalesce Power Yoga and Plyometric Training.

CONCLUSION

The experimental groups of Power yoga, Plyometric training, and the combination of Power yoga and Plyometric training shown notable improvements in Blood Sugar and Urea among the tribal Taekwondo players. Blood Sugar and Urea levels differed significantly between the Power yoga, Plyometric training, Coalesce of Power yoga and Plyometric training, and Control groups among tribal Taekwondo athletes. The Coalesce of Power yoga and Plyometric training also demonstrated these distinctions. In terms of reducing blood sugar

and urea levels, the Coalesce of Power yoga and Plyometric training group did much better than the Cloistered Power yoga group and the Cloistered Plyometric training group.

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