

Effect of Yoga with Step Aerobic Exercises on Breath Holding Time and Resting Pulse Rate among men College Kabaddi Players

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Abstract

This investigation set out to determine the exact physiological impact of combining yogic routines with step aerobics training. Specifically, the inquiry looked into modifications in breath holding capacity and baseline resting heart rate among collegiate male kabaddi competitors. To carry out this scientific evaluation, thirty male kabaddi players were drawn from affiliated institutions of Madurai Kamaraj University. A randomized sampling method brought in these participants. Their ages fell between 17 and 21 years. The cohort was split up into two matching squads of fifteen members each. Group I took up an integrated training regimen featuring yoga along with step aerobic drills. Group II served as the inactive control arm. The experimental cohort engaged in training sessions on three designated days each week. This structured protocol stretched out across a full duration of twelve weeks. Meanwhile, the control subjects kept up with their standard physical education coursework without taking part in any extra physical regimens. The evaluation focused on two primary dependent criteria. These key markers were breath holding duration and basal resting pulse count. Assessments were carried out right before the intervention started and wrapped up immediately after the twelve-week regimen ended. Precise measurement of breath retention was taken down in seconds. At the same time, radial pulse checks were carried out to nail down the exact resting pulse rate. Statistical computations were run on all gathered datasets using the dependent and independent *t*-ratio. The critical threshold of statistical significance was laid down at the 0.05 confidence level. The analytical output pointed to notable variations between the active intervention group and the control group across both parameters. The combined yogic and step aerobic drills brought about substantial, statistically meaningful gains in respiratory retention and cardiac efficiency among the college athletes. In stark contrast, the data for the control group turned out to show no notable shifts. The calculated *t*-values in the unexposed cohort fell through and failed to reach the designated benchmark of statistical significance.

Keywords: Breath Holding Time, Resting Pulse Rate, Yoga with Step Aerobic Exercises, kabaddi

Introduction

The term "Yoga" stems from the ancient root "Yuj," signifying a yoke, union, or ultimate merger. This sacred discipline centers on bringing together the individual spirit and the divine realm. A state of complete oneness arises through this transcendent integration. The classical sage Patanjali set down the core principle as "Yoga Citta-vrtti nirodha." This ancient dictum points toward calming down mental turbulence and holding back ceaseless cognitive activity. The process unfolds as an internal realization, wherein consciousness gazes inward to perceive its own true essence. Spanning several millennia, yoga stands out as a timeless, empirical system. The methodology looks after the holistic physical, psychological, and spiritual facets of human existence.

Aerobic conditioning serves as an outstanding modality to burn off excess adipose tissue and bring about vital metabolic improvements. Such training assists in toning up the musculoskeletal system while building up overall strength, flexibility, and motor coordination. Structured aerobic routines call for sustained physical exertion over extended intervals. This prolonged stimulus steps up cardiorespiratory functioning, which pays off through favorable physiological adaptations across bodily systems. As the workload ramps up in both intensity and duration, active muscle fibers take in higher volumes of metabolic substrates to keep up with escalating energy demands. Step aerobics, originally mapped out by Gin Miller during rehabilitation from a severe knee injury, rapidly took off across the international fitness sector. This dynamic protocol involves stepping up onto and coming down from an elevated platform measuring 15 to 30 centimeters (6 to 12 inches) in height. Practitioners carry out diverse choreographic sequences in rhythmic patterns. Throughout these sessions, the cardiac rate shoots up considerably without ever topping out at its maximum threshold. The cardiovascular system keeps up an uninterrupted supply of oxygen-rich blood, enabling active muscle tissues to break down glycogen and fat stores through aerobic pathways. Ultimately, regular aerobic workouts build up athletic stamina and foster peak physical health by leveling up myocardial efficiency, circulatory dynamics, and muscular capacity.

Methodology

The current research looked into the impact of yoga paired up with step exercises regarding breath-holding time and resting pulse rate among college men kabaddi players. Scientific inquiry set out to figure out how these practices played out in physical conditioning. A hypothesis was put forward stating that noticeable differences would show up concerning the chosen variables, specifically breath-holding time and resting pulse rate, brought about by the influence of yoga combined with step exercises among college men kabaddi players. For this particular scientific endeavor, a total of 30 college men kabaddi players hailing from Madurai Kamaraj University affiliated colleges situated within the Madurai district were picked out at random. The age span of the participants fell anywhere from 17 to 21 years old. To carry out this work, a pre-test and post-test random group design was brought into play, which comprised a control group and an experimental group. The participants were divided up randomly into two equal cohorts consisting of fifteen members each. These cohorts were marked down as Group A and Group B. Group A went through a rigorous regimen of yoga mixed with step aerobic exercise, whereas Group B stayed back and did not take up any formal training whatsoever. Breath-holding time was checked out manually by investigators. On the other side, the resting pulse rate was clocked up using a digital pulse monitor. Measurements and data collection were carried out prior to and right after a period stretching across twelve weeks of active training. The gathered data were looked over by applying a standard t-test. The threshold level of significance was pinned down at 0.05.

Table-I

Analysis of 't' Ratio for the pre and post tests of Control and Experimental group on Breath Holding Time

Variables	Group	Mean		SD		Sd Error	Df	't' ratio
		Pre	Post	Pre	Post			
Breath Holding Time	Control	39.33	38.46	8.94	7.78	2.50	14	0.34
	Experimental	34.86	44.53	14.18	6.02	3.71		2.60*

*Significance at 0.05 level of confidence. *(df- 14) *Table value is 2.14

Figure –I

Bar Diagram shows the mean values of Pre and Post-tests of Control and Experimental Group on Breath Holding Time

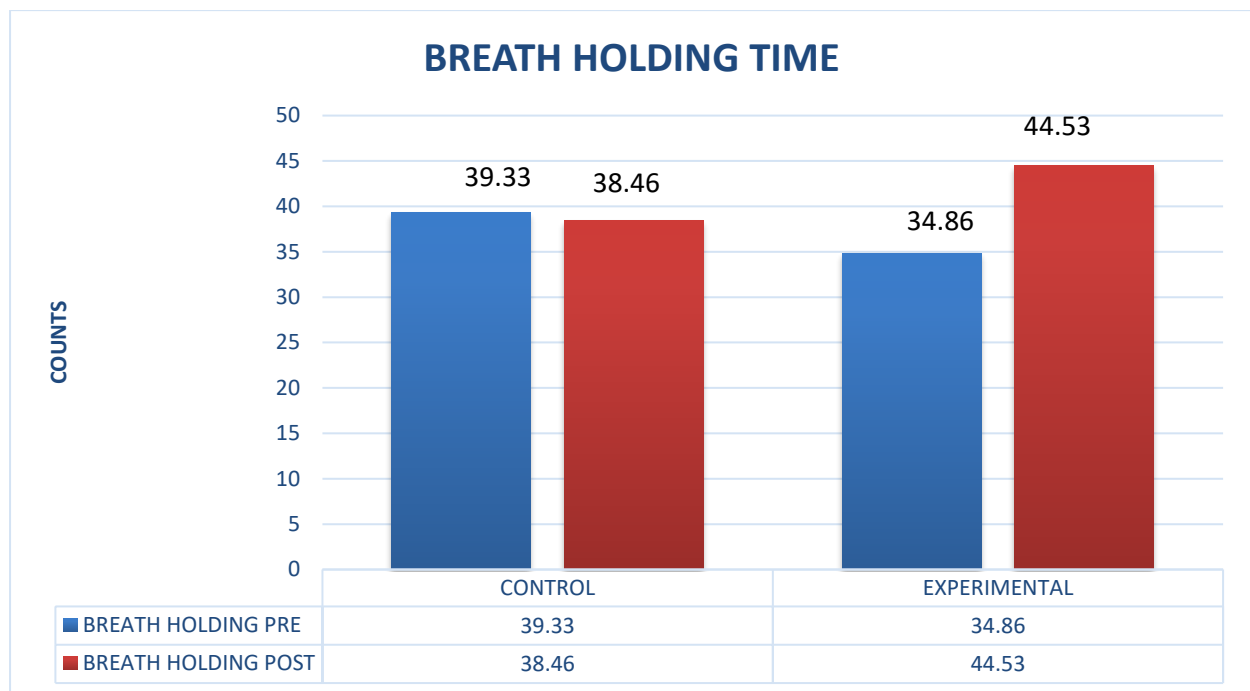


Table –II

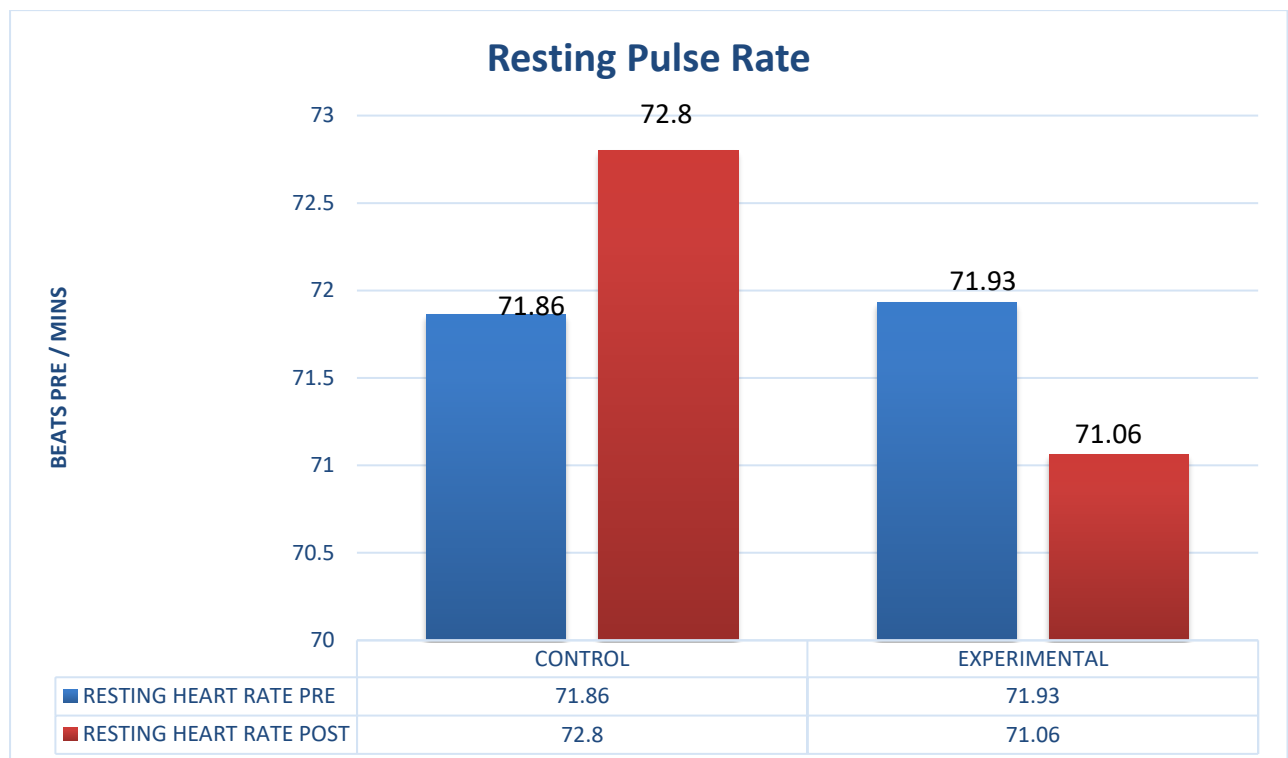
Analysis of 't' Ratio for the pre and post tests of Control and Experimental group on Resting Pulse Rate

Variables	Group	Mean		SD		Sd Error	df	't' ratio
		Pre	Post	Pre	Post			
Resting Heart Rate	Control	71.86	72.80	2.53	2.51	0.52	14	1.79
	Experimental	71.93	71.06	2.52	2.18	0.30		2.82*

*Significance at 0.05 level of confidence. *(df- 14) *Table value is 2.14.

Figure-II

Bar Diagram shows the mean values of Pre and Post-tests of Control and Experimental Group on Resting Pulse Rate



Discussion on Findings

Empirical findings reveal substantial improvements across the targeted physiological metrics within the experimental intervention. The combined regimen of yogic practices and step aerobics yielded marked enhancements in both breath-holding capacity and resting heart rate. Targeted interventions brought about measurable adaptations in respiratory control. Engaging regularly in step aerobics and yogic postures worked out favorably for cardiovascular efficiency.

Statistical analysis points toward a clear, meaningful divergence between the intervention group and baseline parameters. The concurrent training protocol stepped up autonomic regulation and bolstered cardiorespiratory endurance. Systematic practice carried out over the designated intervention duration accounted for the noticeable drop in basal pulse rate. Controlled breath-retention exercises gave rise to heightened tolerance against carbon dioxide buildup, thereby prolonging breath-holding duration.

The collected data back up the initial research assumptions. Observed gains fully bear out the proposed hypothesis regarding the positive synergy between yogic exercises and aerobic routines. Consequently, the core hypothesis stands confirmed. Integrating dynamic aerobic movements with yogic breathing methods sets off beneficial physiological adaptations. The experimental findings hold up under rigorous scrutiny, confirming the viability of the dual-modality training framework for respiratory enhancement and heart-rate stabilization.

Conclusions:

The empirical findings lead to specific deductions within the defined scope and limitations of this investigation. The combined protocol of yogic practices and step aerobics exercises brought about substantial physiological enhancements. The intervention systematically built up pulmonary capacity while scaling down cardiovascular strain at rest. The experimental regimen worked out exceptionally well for the college men kabaddi players. Two primary outcomes stand out clearly from the statistical evaluation.

First, the integration of yoga with step aerobics exercises played out favorably on respiratory control and autonomic regulation. Breath holding time lengthened markedly across the trained cohort. Deep breathing drills and structured postures opened up thoracic expansion and stepped up carbon dioxide tolerance. Concurrently, the training regimen brought down resting heart rate and resting pulse rate. Step aerobics called for elevated cardiac efficiency, which drove down basal myocardial workload. Parasympathetic tone kicked in to steady the baseline pulse. These adaptations added up to superior cardiopulmonary endurance.

Second, the experimental group showed far greater progress than the unconditioned control group. Athletes in the intervention cohort pulled ahead across every measured physiological parameter. The control group merely carried on with routine daily activities and did not register meaningful gains. In contrast, the targeted regimen paid off by drastically boosting breath-holding durations. The training also leveled down baseline pulse metrics among the collegiate kabaddi competitors. Kabaddi raids call out for sustained anaerobic breath-holding capacity alongside swift aerobic recovery. The experimental intervention matched up with these exact competitive demands. The dual conditioning model stood out as an effective protocol to shore up cardiovascular efficiency and breath control in collegiate athletes.

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