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8-Week kapalbhathi intervention on differentiation ability of senior cricket players

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Abstract

The goal of the research was to determine how Kapalbhathi of Yoga affected a cricket player's ability to Differentiation. Differentiation ability was regarded as the dependent variable, while kapalbhathi was regarded as the independent variable. The Backward Medicine Ball Throw Test measures Differentiation skills and records results as the ball hit the mat. The study's design was a random group one. Twenty participants each were divided into two groups. These participants gave their free will to the investigation. While the other individuals were retained in the control group (N=20), the subjects who had learned and practised Kapalbhathi were kept in the experimental group (N=20). Pre-test and post-test data on Differentiation ability were submitted to the following statistical analysis to determine the treatment's effects on the experimental group. ANCOVA (Analysis of Co-Variance) was used to analyse the pre- and post-test results after two months (eight weeks) of therapy to determine the impact of Kapalbhathi on cricket players' Differentiation abilities. Additionally, a graphical presentation was created for quick reference comparison, and mean values for each parameter in relation to the pre- and post-test were highlighted. It was determined that Kapalbhathi shouldn't be included in cricket players' training regimens since it doesn't help to improve their ability to Differentiation.

Keywords: Yoga, kapalbhathi, differentiation ability, cricket and ANCOVA

Introduction

A component of yoga sadhana is pranayama. In Sanskrit, Prana and Ayama combine to make Pranayama. Organs, the mind, and many other vital living processes get energy from prana. Ayama means control and expansion. The ancient texts emphasise pranayama. Yoga uses the yogic practise of pranayama to manage prana. The fourth of the eight steps of yoga outlined in the Patanjali Yogasutra ^[1] is pranayama. It is ranked second in the Hathapradipika and fifth in the Gherandasamhita ^[2]. The Patanjali Yoga Sutra defines pranayama as the cessation of inhalation and exhalation (PYS) movement ^[2].

Kapalbhathi is Hindi meaning "forehead brightness" (or face). Performing kapalbhathi regularly will make one's face more radiant. Inhale deeply to expand the belly while seated in any comfortable meditation position with the palms on the knees and the fingers resting on the thumbs. Exhale and then tighten the abdominal muscles. To retain exhaled air as long as possible, keep your abdomen tight. Keep your shoulders and chest steady. It might take between 15 and 100 minutes to complete this. At initially, one shouldn't do more than 20–25 repetitions. While sleeping, it may be completed in phases. Few yoga teachers advocate stomach breathing. By bringing the diaphragm down on an inhalation, the abdomen is blown out. Exhaling frequently while holding your breath is known as kapalbhathi. People breathe unconsciously. Kapalbhathi strengthens adenoids, clears the sinuses, and stimulates the medullata. It is the phase that follows pranayam. The kandha organ of yoga, which is located four fingers below the neck.

72,000 naries are supposed to originate from it in yoga. Kandh sanchalan assists in arousing the kundalini in the muladhar, which is located between the anus and scrotum, by energising its 72,000 naries. The stomach is immobile during kapalbhati. It stimulates the mouth, ear, eyes, ear canal, and sinuses (gyanindriyas). Agnisar and nauli kriya are both types of kandh sanchalan. Here, Kapalbhathi and Kandh sanchalan are advised. Kapalbhathi should not be performed by patients who have heart disease, excessive blood pressure, hernias, or stomach ulcers. Men have busy lifestyles.

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His one movement is the result of his body and mind operating in unison. With joint efforts, individual success rises. Things from the outer world enter our minds via the body (sense organs), and things from our minds go to the outside world through the body^[3]. In order to create graceful movements, technical sports need highly developed technical skills and coordination. In many sports, especially those that largely depend on technical and tactical factors², coordination abilities determine the upper bounds of athletic performance advancement. The largest challenge facing today's physical educators and coaches is giving progressive instructions based on scientific technique that result in the desired results. Different strategies have been developed throughout time to increase physical strength, speed, and other components, which have proven successful, but mental activity management, or coordinated efforts, is still a mystery.

Coaches and PE instructors in India use similar teaching techniques. Training without taking into account its effects. Sometimes coaches and PE instructors are unable to recognize the training property, which reduces performance.

Cricket is a hobby, someone once stated. No longer slow and monotonous. Limited-over cricket is referred to as the "perfumed harlot." Physical agility is required for one-day games. Watching fielders move swiftly is lovely. An excellent try that still results in the ball popping out of frantic hands to give the delighted batsman the run he craves, a good catch, a precise throw, catching the scrambling batsman out of his crease, an angosing misfield that takes away runs the side can't afford, or a wonderful try that still results in the ball popping out of frantic hands, may turn the game around.

In cricket, there are several departments such as batting, bowling, and fielding, and none of them are more important than the others. Sports training and practices have advanced along with science, and this has had an impact on cricket, particularly on bowling and fielding. Fielding, according to elite cricket players, coaches, and commentators, should take precedence. According to Tony Greig, "a team that never drops a catch never loses a match"^[4].

Physical qualities of a sport modality contribute to its performance and allow coaches and scientists to notice distinctions among players of other modalities. Physical (general and particular circumstances), psychological (personality and motivation), anthropometrical (body morphology, anthropometry, and body composition), and biomechanical aspects affect sports performance.

Coordination is important to maximize conditional, technical, and tactical capabilities. A sportsman can't maximize his psycho-biological powers and reserves without well-

developed coordination. Coordination abilities determine the maximum limits of sports performance improvement in many sports, especially those that rely heavily on technical and tactical factors. Coordination evaluation and growth potential are key in identifying athletic talent.

The capacity to establish a high degree of fine tuning or harmony between individual movement phases and body component motions is known as differentiation ability. High degree of precision and movement economy are two ways it manifests. The capacity for differentiation depends on the conscious and accurate awareness of the temporal, dynamic, and spatial aspects of movement execution and their comparison with parameters of movements ideas at various levels of control and regulation. The high level of differentiating ability is influenced by movement experience (also known as motor memory) and the amount of motor action mastery. It helps the athlete to distinguish minute differences in the timing, dynamics, and execution of movements.

When the goal is to obtain a high degree of mastery over sports motions and their efficient application in competition, differentiation ability should be emphasised in particular. In several sports, high levels of distinction are shown by a sensation or sense of an implement or movement, such as a ball's sense, a movement's sense, a water's sense, etc. Another unique form of differentiating talent is the capacity to carry out very skilled motions with the hands, feet, or head. Another kind of differentiating skill is the capacity for relaxing muscles.

Sports that place distinct demands on the control and regulatory systems exhibit differentiation ability in different ways. In cricket, the ability to differentiate between several movement models permits very fine and accurate motions. Dexterity of the feet and head are how it manifests itself in football. Therefore, different ways and procedures should be used for various sports to develop differentiation ability. The research examined the effects of Kapalbhathi intervention on cricket players' Differentiation ability.

Methodology

Selection of subject & study design

The random group design was used for the study. Two groups were made, each comprising of twenty subjects. These subjects participated voluntarily in the study. The subjects who learned and practiced Kapalbhathi were kept in the experimental group (N=20) and the other subject were kept in control group (N=20). The age of subjects was 18 to 25 years.

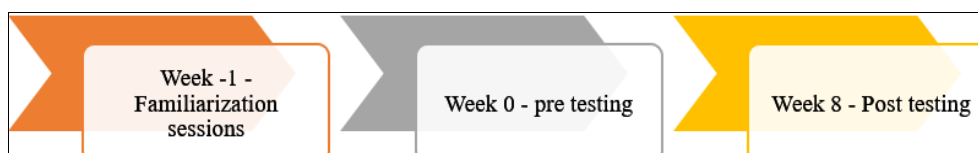


Fig 1: Intervention schedule

Administration of test

Backward medicine ball throw test

Objective

To assess the Differentiation Ability of the Subjects.

Equipments

A gymnastic mat, size 3' x 6', One medicine ball weighting 2kg, Five medicine balls weighing 1 kg. Each, Pencil, papers and clipboard

Description

A gymnastic mat was kept 2 meters away from the starting line. A circle of 40 cm. radius was drawn in the middle of the mat and a medicine ball of 2kg was kept at the center of the circle. The subjects were asked to stand behind the starting line facing the opposite direction. They were asked to throw five medicine balls (1 kg. each) over the head to hit the 2 kg. Ball kept on the mat, one after another by using both the hands. One practice trial was given to all the subjects.

Instructions

1. Only overhead throw was permitted.
2. The students were not allowed to look back.

Scoring

Points were decided considering the first pitch of the ball. The

score of the individual was the total points scored in all the five throws.

1. Medicine ball touching the mat – 1 point
2. Medicine ball touching the circle line – 2 points
3. Medicine ball touching inside the circle – 3 points.
4. Medicine ball touching the 2kg. Medicine Ball – 4 points.

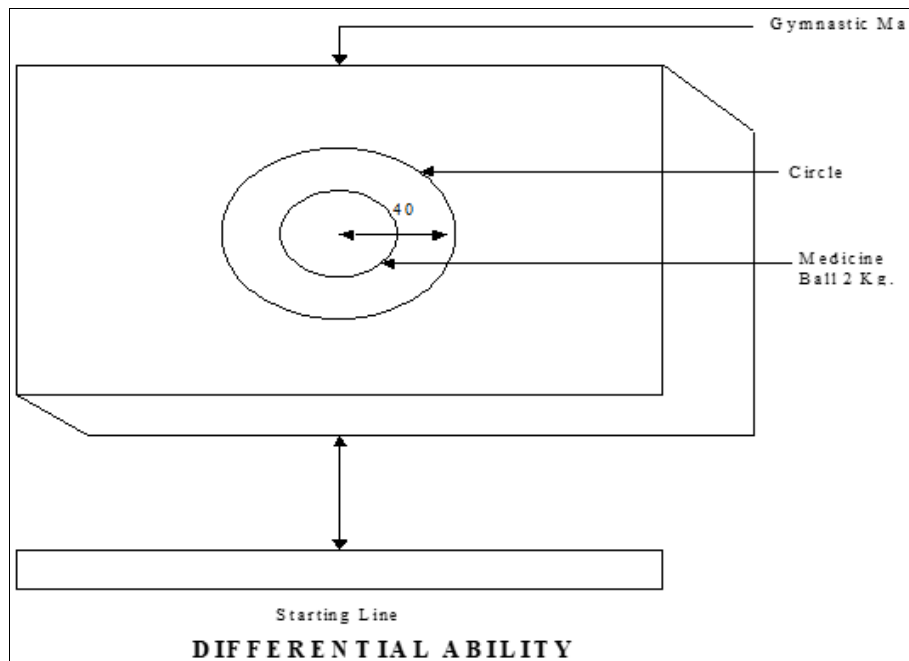


Fig 2: Differential ability

Training Schedule for the Experimental groups
(Eight weeks, Five days a week, 30-40 min/day)

Activities	Total time duration for all the Groups = 30-40 min
Prayer	3 min
Nadi Shuddhi	5 min
Kapalbhati	20-30 min
Shanti Path	2 min

Result

The collected data were analyzed statistically through analysis of covariance (ANCOVA) to find out the significance difference, if any between the groups. The 0.05 level of confidence was fixed to test the level of significance difference, if any between groups.

Table 1: Descriptive Statistics of Pre-Test and Post-Test of Experimental Group and Control Group in Differentiation Ability

Groups	Observation	M	S. D	N
Experimental group	Pre – test	7.4000	1.78885	20
	Post – test	7.9000	1.83246	20
Control group	Pre – test	7.6000	1.60263	20
	Post – test	7.2500	1.77334	20

Above table 1 and fig 3 includes mean (M) and standard deviation (SD) of differentiation ability in the both

observations i.e., on pre-test and post-test of experimental group and control group. Above table also indicates that the experimental group post – test mean value (7.90) was greater than pre – test mean value (7.40). In control group post – test mean value (7.25) was lower than pre – test mean value (7.60).

Table 2: Analysis of Co-Variance of Comparison of Adjusted Post Test Means of Experimental Group and Control Group of Differentiation Ability

Source	Type III Sum of Squares	df	Mean Square	F	P-value
Pre	33.728	1	33.728	13.894	.001
groups	5.769	1	5.769	2.377	.132
Error	89.822	37	2.428		
Total	2423.000	40			
Corrected Total	127.775	39			

*p value < 0.05 is significant

Above table shows that there was no significant effect of training on differentiation ability as the p-value was 0.132 which was greater than 0.05. It also shows that there was a significant difference found between experimental and control group during pre – test as the p-value was 0.197 which was greater than 0.05. Hence, no post hoc test was analysed.

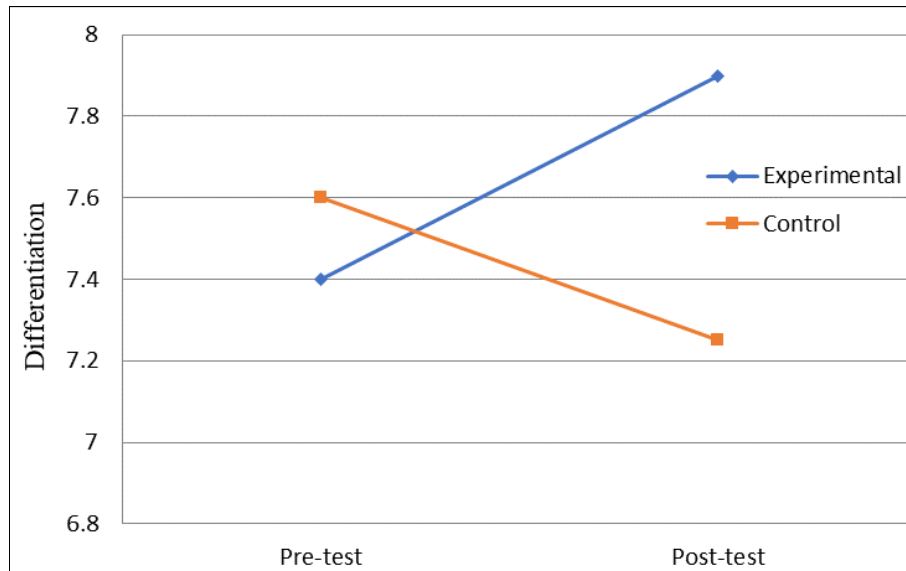


Fig 3: Graphical representation of Pre-Test and Post-Test of Experimental Group and Control Group of Differentiation Ability

Discussion on Findings

The research scholar examined the effect of Kapalbhathi on selected Coordinating ability i.e., Differentiation ability of Cricket. The results, in general, support that Kapalbhathi doesn't improved Differentiation ability of Cricketers. It was found that the experimental group doesn't improve significantly. The rate of improvement was higher for the experimental groups in comparison to the control groups but doesn't have significant difference. Finally, results show, that the subjects who followed the treatment of Kapalbhathi doesn't improve their Differentiation ability than participants in control group.

Conclusion

From the above findings, it is concluded that the Kapalbhathi having insignificant effect on selected Coordinating ability i.e., Differentiation ability as in 8 weeks.

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