

# IMPACTS OF ASANAS AND PRANAYAMA ON FLEXIBILITY AND VITAL CAPACITY AMONG HANDBALL PLAYERS

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## ABSTRACT

*This examine evaluated the Effects of Asanas and Pranayama on Flexibility and Vital Capacity. The current research was conducted at the Government Arts and Science College, Modakkurichi, Erode, (Affiliated to Bharathiar University, Coimbatore), Tamilnadu, India. The age of the subjects were ranged between 19 to 23 years. The subjects active were randomly assigned to two equal groups. Group - I (n=20) underwent yogic training group and Group - II (n=20) control group. Tools and Technique i.e. flexibility and vital capacity were used and measured in this study to know the effects of asanas and pranayama on its. Measurements for the variables were taken at the pre test and at the end of the treatment period, after eight weeks post test the data were collected for all the variables from treatment group, for three days. During this period the subject were not allowed to participate in any training. The information was analyzed using paired 't' test to compare the before and after yogic training programme values of treatment group. P value of less than 0.05 was accepted as indicating significant difference between the compared values. The results of this investigation indicate that eight weeks of asanas and pranayama practice can significantly improve flexibility and vital capacity in college level handball players.*

**KEYWORDS:** *Asanas, Pranayama, Flexibility, Vital Capacity and handball players.*

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## 1. INTRODUCTION

Yoga treatment can include a variety of approaches or a grouping of techniques. These can include the use of asanas, pranayamas, meditation techniques, stress reduction and entertainment techniques (Anithya bhava), and mindfulness. Depending on the health condition or the basic cause of illness, a yoga can be used with specific techniques or a arrangement of methods to repair balance in the body and mind. Yoga helps people make conscious movements or positional changes in their body, also known as proprioception or kinaesthesia, to find the areas of limitation and build energy and strength there. In turn, this will help balance the way the body moves and functions to relieve stress, pain and tension in areas that are stale.

### 1.1 FLEXIBILITY

Flexibility is the ability to complete a wide range of progress in the joints while for repetition of work done in natural speed. Flexibility is most important. Flexibility helps to move bodily parts easily, takes less time, energy to perform a task. stretch in muscle reduces tension and provides greatest length, thus yielding passive physical' stretch.

### 1.2 VITAL CAPACITY

The total volume of air that can be willingly moved in one breath, from full inspiration to maximum expiration or vice versa, is termed the forced vital capacity. This consists of the tidal volume plus the aspiratory and expiratory reserve volume. Although' values for vital capacity vary considerably with body size as well as 15 with the position of the body during the measurement. Average values are usually 4 - 5 liters in young women. Vital capacities of 6 - 7 liters are not rare for tall individuals and values of 7.6, 8, 8.1 liters have been reported for a comparative football player and an Olympic gold medal list in cross country race and skipping respectively. Swimming and diving may be more conducive to the development of larger than normal vital capacities.

## 2. METHODOLOGY

The current investigation was conducted at the Government Arts and Science College, Modakkurichi, Erode, (Affiliated to Bharathiar University, Coimbatore), Tamilnadu, India. The age of the subjects were ranged between 19 to 23 years. The subjects active were randomly assigned to two equal groups. Group - I (n=20) underwent yogic training group and Group - II (n=20) control group. Tools and Technique i.e. flexibility and vital capacity were used and measured in this study to know the effects of asanas and pranayama on its. Measurements for the variables were taken at the pre test and at the end of the treatment period, after eight

weeks post test the data were collected for all the variables from treatment group, for three days. During this period the subject were not allowed to participate in any training.

**Table 1:** Yoga Training Programme for College Level Handball Players

Asana and Pranayama	1 <sup>st</sup> to 3 <sup>rd</sup> Week		4 <sup>th</sup> to 6 <sup>th</sup> Week	
	Set	Duration Of Exercise in seconds	Set	Duration Of Exercise in Seconds
Warming Up	-	250	-	250
Tada – asana	3	190	2	190
Urdhva – hasta asana	3	190	2	190
Vriksha – asana	3	120	3	120
Vajra asana	3	120	3	120
Paschima – uttana – asana	4	120	2	120
Padma – asana	4	160	2	160
Sarvanga – asana	3	120	2	120
Hala – asana	3	120	1	120
Karna – pida – asana	3	120	2	120
Bhujanga – asana	3	120	2	120
Dhanur asana	3	120	2	120
Shawa – asana	1	180	1	180
Kapalbhati	2	240	2	240
Anulom vilom pranayam	2	240	2	240
Nadi shodhana	2	240	2	240
Ujjayi-pranayama	2	240	2	240
Simhasana-pranayama	2	240	2	240
Shawa – asana	1	180	1	180

### 3. SELECTION OF VARIABLES AND TESTS

The subjects were tested on the following variables.

**Table 2**

Name of Variables	Test	Unit
Flexibility	Sit and Reach Test	In Centimeters
Vital Capacity	Spiro meter test	in liters

### 4. STATISTICAL ANALYSIS

The information was analyzed using paired ‘t’ test to compare the before and after asanas and pranayama training programme values of treatment group. P value of less than 0.05 was accepted as indicating significant difference between the compared values.

## 4.1 RESULTS

TABLE-3

**RELATIONSHIP OF MEAN, SD AND 'T'-VALUES OF THE FLEXIBILITY BETWEEN PRE & POST TEST OF THE YOGIC TRAINING GROUP AND CONTROL GROUPS OF COLLEGE LEVEL HANDBALL PLAYERS**

\*Significant at 0.05 level of confidence

Table-3 reveals that the mean values of per test and post test of control group for flexibility were 21.50

Flexibility	Groups	Test	Mean	S.D	't' Values
	Control Group	Pre Test	21.50	1.31	1.65
		Post Test	21.90	1.49	
	Yogic Training Group	Pre Test	21.00	1.45	9.37*
Post Test		24.80	0.89		

and 21.90 respectively; the obtained t ratio was 1.65 respectively. The tabulated t value is 1.73 at 0.05 level of confidence for the degree of freedom 19. The calculated t ratio was lesser than the table value. It is found to be insignificant change in flexibility of the men college level handball players. The obtained mean and standard deviation values of pre test and post test scores of yogic training group were 21.00 and 24.80 respectively; the obtained t ratio was 9.37. The required table values is 1.73 at 0.05 level of confidence for the degree of freedom 19. The obtained t ratio was greater than the table value. It is found to be significant changes in flexibility of the college level handball players. The mean values on yogic training group and control group are graphically represented in figure-1



**FIGURE-1: BAR DIAGRAM SHOWING THE PRE TEST & POST TEST ON FLEXIBILITY OF CONTROL AND YOGIC TRAINING GROUPS**

TABLE-4

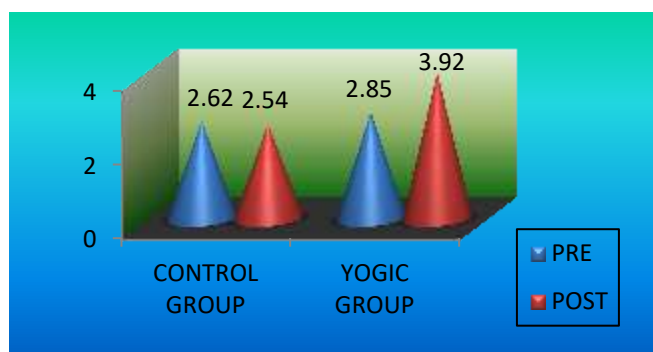
VITAL CAPACITY	Groups	Test	Mean	S.D	't' Values
	Control Group	Pre Test	2.00	0.14	1.08
		Post Test	2.14	0.21	
	Yogic Training Group	Pre Test	2.15	0.19	9.41*
Post Test		3.22	0.38		

**RELATIONSHIP OF MEAN, SD AND 'T'-VALUES OF THE VITAL CAPACITY BETWEEN PRE & POST TEST OF THE YOGIC TRAINING GROUP AND CONTROL GROUPS OF COLLEGE LEVEL HANDBALL PLAYERS**

\*Significant at 0.05 level of confidence

Table-4 reveals that the mean values of per test and post test of control group for vital capacity were 2.00 and 2.14 respectively; the obtained t ratio was 1.08 respectively. The tabulated t value is 1.73 at 0.05 level of confidence for the degree of freedom 19. The calculated t ratio was lesser than the table value. It is found to be insignificant change in vital capacity of the college level handball players. The obtained mean and standard

deviation values of pre test and post test scores of yogic training group were 2.15 and 3.22 respectively; the obtained t ratio was 16.41. The required table value is 1.73 at 0.05 level of confidence for the degree of freedom 19. The obtained t ratio was greater than the table value. It is found to be significant changes in vital capacity of the college level handball players. The mean values on yogic training group and control group are graphically represented in figure-2



**FIGURE-2: BAR DIAGRAM SHOWING THE PRE TEST & POST TEST ON VITAL CAPACITY OF CONTROL AND YOGIC TRAINING GROUPS**

## 5. DISCUSSION ON FINDINGS

The outcome of the study indicates that the experimental group namely game yogic training group (asanas and pranayama) had shown significant improvement in flexibility and vital capacity among the college level handball players. The control group college level handball players had not shown significant changes in any of the flexibility and vital capacity. The analysis of the study indicates that the yogic training group (asanas and pranayama) had shown significant level difference in flexibility and vital capacity among college level handball players.

It is conditional from the literature and from the result of the current study. That systematically considered training develops dependent variables are very importance quilts for superior performance in almost all sports and games. Hence it is concluded that systematically designed training may be programmes of all the discipline in order to achieve highest given due recognition and implemented properly in the training performance. These findings are in accordance with the findings of **Eswari (2021)<sup>1</sup>**, **Senthil Kumaran (2018)<sup>2</sup>**, **Bandi Hari Krishna (2014)<sup>8</sup>**, **Jayachandran (2014)<sup>6</sup>** and **Sree (2012)<sup>5</sup>**.

## 6. CONCLUSIONS

From the analysis of the data, the following conclusions were drawn.

1. The college level handball players of control group had not shown significant changes in any of the flexibility and vital capacity.
2. The yogic training group (asanas and pranayama) shown significant enhancement in flexibility and vital capacity among college level handball players.
3. There college level handball players who had undergone eight weeks of yogic training (asanas and pranayama) showed significant enhancement in flexibility and vital capacity when compared with control group.

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