

## EFFECT OF B.K.S. IYENGAR YOGA ON SELECTED PHYSIOLOGICAL AND PSYCHOLOGICAL VARIABLES AMONG COLLEGE GIRLS



Laishram Shila Devi \*



Balaji D. Prasanna\*\*

\*Research Scholar, Deptt. Phy. Edu., National College, Tiruchirapalli (T.N)-INDIA.

\*\*Head & Director, Deptt. Phy. Edu., National College, Tiruchirapalli (T.N)-INDIA.

E. Mail: shilamdevi@gmail.com

### Abstract:

The purpose of the study was to find out the effect of B.K.S. Iyengar yoga on selected physiological and psychological variables among college girls. The investigator randomly selected 60 girls from National College, Tiruchirapalli, Tamilnadu. The age groups of subjects were between 18 and 23 years. They were divided into two equal groups as experimental group (B.K.S. Lyengar yoga) and control group based on their initial score in physiological and psychological variables and each groups consisting 30 subjects. Experimental group are underwent the training for 12 weeks, 5 days a week for maximum of one hour in morning. The control group was kept in active rest. The pre test and post test were conducted before and after the training for all three groups. The selected physiological variables, pulse rate and blood pressure were measured by Radial Pulse and Sphygmomanometer respectively and in psychological variables, stress was measured by standardized stress questionnaire constructed by Dr. Latha Satish (1997) consisting of 52 questions and self-confidence was measured by self-confidence questionnaire developed by Rekha Agnihotri (1987) consisting of 52 questions. The collected data were statistically analyzed by using Analysis of covariance (ANCOVA) to determine the significant difference and tested at 0.05 level of significance. The result of the study shows that the experimental group had significant improvement in all the selected physiological and psychological variables than the control group among college girls.

**Keywords:** Physical Activity Program, B.K.S. Lyengar Yoga, Physiological & Psychological Variables.

### Introduction:

Lyengar Yoga is a form of Hatha Yoga in which there is a focus on the structural alignment of the physical body through the development of asanas. Through the practice of a system of asanas, it aims to unite the body, mind and spirit for health and well-being. The discipline is considered by its practitioners to be a powerful tool to relieve the stresses of modern-day life, in turn helping to promote total physical and spiritual well-being. B.K.S. Lyengar was the founder of Lyengar Yoga and is considered one of the foremost yoga teachers in the world. In his book, *Light on Life*, he explains how physical weaknesses led him to take up the ancient practice of yoga. He used props such as ropes, belts and bricks to help even the elderly, weak, and inflexible experience yoga's therapeutic effects, often allowing yoga student to hold positions for longer periods than might be possible without them.

Lyengar yoga appeals to a huge range of people, of all fitness levels, and is particularly well-suited to yoga students who have a meticulous approach to yoga and an interest in the body's anatomy. It is excellent for people with back problems and for people who suffer from stress, two conditions that often go together, but in reality anyone can benefit from it.

Furthermore, the poses in Lyengar yoga are done with great attention to detail. As a result, the increased body awareness developed allows one to become more aware of posture and its direct effects on psychological states, and to carry this awareness off the yoga mat into everyday life. Practiced regularly, Lyengar yoga is a wonderful, natural way to cope with physical, mental, and emotional stress.

In recent years, researchers have started measuring some of yoga's effects on health, and -not surprisingly- the results are fascinating.

### Objectives of Study:

- To determine the physical, physiological and psychological effects of practicing Lyengar Yoga.
- To determine the reason and motivation for practitioners to continue Lyengar Yoga practice.
- To evaluate the perception of all sorts of 'stress'.
- To compare the personality characteristics of Lyengar Yoga practitioners with the no practitioners.

**Methodology:**

To achieve the purposed of the study, the investigator randomly selected 60 girls from National College, Tiruchirapalli, Tamilnadu. The age groups of subjects were between 18 and 23 years. They were divided into two equal groups as experimental group and control group based on their initial score in physiological and psychological variables and each groups consisting 30 subjects. Experimental group was underwent the training programmed for 12 weeks, 5 days a week for maximum of one hour in morning. The control group was kept in active rest. The pre test and post test were conducted before and after the training for all two groups.

**Physiological Variables:**

SL.NO	VARIABLE	EQUIPMENT/TEST
1	Systolic Blood Pressure	Sphygmomanometer
2	Diastolic Blood Pressure	Sphygmomanometer
3	Resting Pulse Rate	Radial Pulse

**Psychological Variables**

SL.NO.	VARIABLES	TEST & MEASUREMENT
1	Stress	questionnaire constructed by Dr. Latha Satish (1997)
2	Self- confidence	questionnaire developed by Rekha Agnihotri (1987)

The collected data were statistically analyzed by using Analysis of covariance (ANCOVA) to determine the significant difference and tested at 0.05 level of significance.

**Results and Discussion:**

The analysis of covariance on the data obtained on physiological and psychological variables of experimental and control groups have been analyzed and tabulated in Table I to V

**TABLE NO-I  
ANALYSIS OF COVARIANCE ON SYSTOLIC BLOOD PRESSURE BETWEEN CONTROL AND EXPERIMENTAL GROUPS**

TEST	YOGA GROUP	CONTROL GROUP	SV	SS	DF	MS	F	TV 0.05
Pre test	146.53	142.47	Between	124.03	1	124.033	0.35	4.01
			Within	9917.47	58	354.20		
Post test	126.80	147.00	Between	3060.30	1	3060.30	11.12*	4.01
			Within	7704.40	58	275.16		
Adjusted	125.52	148.28	Between	3835.41	1	3835.41	27.32*	4.01
			within	3790.06	57	140.37		

\*Significant at 0.05 level of confidence.

Table I shows that the analysis of covariance on systolic blood pressure and pre test means of experimental group and control group are 146.53 and 142.47 respectively. The obtained 'F' ratio is 0.35. Since the obtained 'F' ratio is lower than the Table value of 4.01, it is indicated that there was no significant at 0.05 level of confidence with the df 1 and 58 is 4.01. The post – test means of Experimental group and Control group are 126.80 and 147.00 respectively. The obtained 'F' value is 11.12. Since this is higher than the Table value 4.01 and indicated that the difference among the groups on post test means was significant at 0.05 level of confidence with the df 1 and 58 is 4.01.

The adjusted post – test means of Experimental group and Control group, are 125.52 and 148.28 respectively. The obtained 'F' ratio is 27.32. Since this is higher than the Table value of 4.01, and indicated that the difference among the groups on adjusted post means is significant at 0.05 level of confidence with the df 1 and 58 is 4.01.

**TABLE- II**  
**ANALYSIS OF COVARIANCE ON DIASTOLIC BLOOD PRESSURE BETWEEN CONTROL AND EXPERIMENTAL GROUPS**

TEST	YOGA GROUP	CONTROL GROUP	SV	SS	DF	MS	F	TV 0.05
Pre test	84.27	83.60	Between	3.33	1	3.333	0.06	4.01
			Within	1688.53	58	60.30		
Post test	74.93	84.27	Between	653.33	1	653.33	11.11*	4.01
			Within	1645.87	58	58.78		
Adjusted	74.74	84.46	Between	706.19	1	706.19	17.37*	4.01
			within	1097.94	57	40.66		

\*Significant at 0.05 level of confidence.

Table II shows that the analysis of covariance on diastolic blood pressure and pre test means of experimental group and control group are 84.27 and 83.60 respectively. The obtained 'F' ratio is 0.06. Since the obtained 'F' ratio is lower than the Table value of 4.01, it is indicated that there was no significant at 0.05 level of confidence with the df 1 and 58 is 4.01. The post – test means of Experimental group and Control group are 74.93 and 84.27 respectively. The obtained 'F' value is 11.11. Since this is higher than the Table value 4.01 and indicated that the difference among the groups on post test means was significant at 0.05 level of confidence with the df 1 and 58 is 4.01. The adjusted post – test means of Experimental group and Control group, are 74.74 and 84.46 respectively. The obtained 'F' ratio is 17.37.

**TABLE- III**  
**ANALYSIS OF COVARIANCE ON RESTING PULSE RATE BETWEEN CONTROL AND EXPERIMENTAL GROUPS**

TEST	YOGA GROUP	CONTROL GROUP	SV	SS	DF	MS	F	TV 0.05
Pre test	83.60	82.00	Between	19.20	1	19.200	0.29	4.01
			Within	1835.60	58	65.56		
Post test	74.27	83.60	Between	653.33	1	65.33	13.04*	4.01
			Within	1402.53	58	50.09		
Adjusted	73.65	84.22	Between	828.69	1	828.69	71.63*	4.01
			within	312.38	57	11.57		

\*Significant at 0.05 level of confidence.

Table III shows that the analysis of covariance on resting pulse rate and pre test means of experimental group and control group are 83.60 and 82.00 respectively. The obtained 'F' ratio is 0.29. Since the obtained 'F' ratio is lower than the Table value of 4.01, it is indicated that there was no significant at 0.05 level of confidence with the df 1 and 58 is 4.01. The post – test means of Experimental group and Control group are 74.27 and 83.60 respectively. The obtained 'F' value is 13.04. Since this is higher than the Table value 4.01 and indicated that the difference among the groups on post test means was significant at 0.05 level of confidence with the df 1 and 58 is 4.01. The adjusted post – test means of Experimental group and Control group, are 73.65 and 84.22 respectively. The obtained 'F' ratio is 71.63. Since this is higher than the Table value of 4.01, and indicated that the difference among the groups on adjusted post means is significant at 0.05 level of confidence with the df 1 and 58 is 4.01.

**TABLE- IV**  
**ANALYSIS OF COVARIANCE ON STRESS BETWEEN CONTROL AND EXPERIMENTAL GROUPS**

TEST	YOGA GROUP	CONTROL GROUP	SV	SS	DF	MS	F	TV 0.05
Pre test	82.83	79.267	Between	190.82	1	190.817	0.26	4.01
			Within	42740.03	58	736.90		
Post test	67.13	83.17	Between	3856.02	1	3856.02	6.05*	4.01
			Within	36965.63	58	637.34		
Adjusted	65.52	84.78	Between	5533.75	1	5533.75	143.28*	4.01
			within	2201.509	57	38.62		

\*Significant at 0.05 level of confidence.

Table IV shows that the analysis of covariance on stress between and pre test means of experimental group and control group are 82.83 and 79.26 respectively. The obtained 'F' ratio is 0.26. Since the obtained 'F' ratio is lower than the Table value of 4.01, it is indicated that there was no significant at 0.05 level of confidence with the df 1 and 58 is 4.01.

The post – test means of Experimental group and Control group are 67.13 and 83.17 respectively. The obtained 'F' value is 6.05. Since this is higher than the Table value 4.01 and indicated that the difference among the groups on post test means was significant at 0.05 level of confidence with the df 1 and 58 is 4.01. The adjusted post – test means of Experimental group and Control group, are 65.52 and 84.78 respectively. The obtained 'F' ratio is 143.28. Since this is higher than the Table value of 4.01, and indicated that the difference among the groups on adjusted post means is significant at 0.05 level of confidence with the df 1 and 58 is 4.01.

**TABLE- V**  
**ANALYSIS OF COVARIANCE ON SELF CONFIDENCE BETWEEN CONTROL AND EXPERIMENTAL GROUPS**

TEST	YOGA GROUP	CONTROL GROUP	SV	SS	DF	MS	F	TV 0.05
Pre test	29.53	28.5	Between	16.02	1	16.017	0.12	4.01
			Within	7864.97	58	135.60		
Post test	21.93	29.07	Between	763.27	1	763.27	7.27*	4.01
			Within	6091.73	58	105.03		
Adjusted	21.52	29.48	Between	950.16	1	950.16	55.67*	4.01
			within	972.847	57	17.07		

Significant at 0.05 level (the table value required for significance at 0.05 level with df 1 and 58 is 4.01)

Table V shows that the analysis of covariance on self confidence and pre test means of experimental group and control group are 29.53 and 28.5 respectively. The obtained 'F' ratio is 0.12. Since the obtained 'F' ratio is lower than the Table value of 4.01, it is indicated that there was no significant at 0.05 level of confidence with the df 1 and 58 is 4.01.

The post – test means of Experimental group and Control group are 21.93 and 29.07 respectively. The obtained 'F' value is 7.27. Since this is higher than the Table value 4.01 and indicated that the difference among the groups on post test means was significant at 0.05 level of confidence with the df 1 and 58 is 4.01.

The adjusted post – test means of Experimental group and Control group, are 21.52 and 29.48 respectively. The obtained 'F' ratio is 143.28. Since this is higher than the Table value of 4.01, and indicated that the difference among the groups on adjusted post means is significant at 0.05 level of confidence with the df 1 and 58 is 4.01.

All the above tables shows the systolic blood pressure, diastolic blood pressure, resting pulse rate, stress and self confidence among the experimental and control groups before and after scores of B.K.S. Lyengar yoga practices. There was a significance changes in all the variables. The pre test means of all the variables does not show any significance difference. After the B.K.S. Lyengar yoga practices the experimental group shows significant changed in all physiological and psychological variables. Whereas the control group shows no significant difference in all the above mentioned variables.

#### Conclusions:

- It was conclude that due to 12 weeks yogic practices improved the physiological and psychological variables among college girls.
- The physiological variable of systolic blood pressure was significantly reduced due to influence of 12 weeks training of yogic practices group compared to control group.
- The physiological variable of diastolic blood pressure was significantly reduced due to influence of 12 weeks training of yogic practices group compared to control group.
- The physiological variable of resting heart rate was significantly reduced due to influence of 12 weeks training of yogic practices group compared to control group.
- The psychological variable of stress was significantly reduced due to influence of 12 weeks training of yogic practices group compared to control group.
- The physiological variable of self confidence was significantly reduced due to influence of 12 weeks training of yogic practices group compared to control group.

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