Journal of Advances and Scholarly Researches in Allied Education
Vol. 16, Issue No. 6, May-2019, ISSN 2230-7540

Effect of 26 Weeks Extended Yogic Program on the Selected Psychological and Physiological Variables of Juvenile Prison Inmates

Kanhaiya Kumar Singh*

Ph.D., Assistant Professor, Sports Academy, Bahir Dar University, Ethiopia, Africa

Abstract – The purpose of this study was to investigate the effect of a 26 week extended yoga program on the selected psychological and physiological variables of the juvenile prison inmates. Subjects aged 12-18 years old were randomly selected through simple random sampling and divided into two equal groups experimental and control (N=100). The selected criterion measured was attitude, aggression, and anxiety in psychology and blood-pressure, pulse rate, vital capacity and cardio-vascular in physiology. After the pre-data-collection experimental group underwent through 26 weeks extended yoga program and control group were left remain busy with their as usual daily casual. Pre-post data had been collected (through using standard tool and equipment using standard procedure) and analyzed the difference through independent sample 't' test and ANCOVA as well, using SPSS 20.0. Finding clearly showed that, the general social attitude of the prison inmates has been improved and aggression has been moderately reduced. At the same time, inmates feel less anxious after the extended yoga program. Whereas in physiological variables blood pressure; diastolic and systolic has been reduced compare to control group but remain close to health standard value but Vital capacity and Cardio-Vascular efficiency have been significantly improved after 26 weeks of the extended yoga program. Hence it is concluded that yogic Programs can change the life of common people as well as prisoner inmates.

Keywords: Extended Yogic Program, Attitude, Aggression, Anxiety, Blood Pressure, Pulse Rate, Vital Capacity, and Cardio-Vascular Efficiency and Juvenile Prison Inmates

----------X----------

INTRODUCTION

Yoga has a long history, it is very ancient. Yoga involved in Indian continent over a period of 5000 years. It has its roots in the Hinduism and Brahmanism, yet our contemporary western approach of yoga has titled to do any particular belief of religion. However, it can be said that contemporary western approach to yoga is only a very small portion of what yoga is all about. Yoga is a deep well of knowledge which helps quell our thrust for truth. Yoga stands for union made out of 'Yuj'; a union of body, minds, and spirit. It is all about to know yourself.[1] Yoga helps you towards your inner awareness and spiritual awareness about life in this universe. The path of yoga, Physiology, and Psychology deals with a different aspect of human behavior. Yoga is mostly internal in its nature whereas another is external in nature and depends on behavior outcomes. [2]

Now, it is scientifically proven and widely accepted that yoga can transform the life of mankind not only physical health also ensure mental and emotional health of prisoners. [3]

Crimes are the acts which are forbidden and punished by law; these acts may threaten the well being of the society or injure any of its members. People are most likely to commit a criminal act between the age of 15 and 25 years. Imprisonment is a method of dealing with the people who commit crimes by confining them to a fortified boundary with certain strict rules for all that in the prison. Crimes like any other action of the body are a manifestation of thought. Crimes come to be regarded as essentially a social problem and retribution as the object of improvement is discarded. Detention as an objective in imprisonment is also very limited in scope. Reformation of the offender is being regarded as the ultimate aim of the prison sentence. Rehabilitation of the criminals (Convicted and Under-trail both) has become one of the most important objectives of the jail authorities. [4]

The objective of the Study: The objective of the study was to investigate the effect of 26 weeks extended yoga program on the selected psychological and physiological variables of the juvenile prison inmates.

www.ignited.in

Significance of the Study: The finding of this study will redound to the benefit of society considering that yogic science plays an important role in human life today. The greater need to reduce the juvenile delinquency in India, justify the need for more effective life changing approaches for minors in jails. Thus jail that applies the recommended approach derived from the results of the study will be able to serve better to reduce juvenile delinquency in India and makes prison inmates life happier and healthier.

Methodology: Sampling- The subjects for the study were randomly selected for the purpose of the study. The subjects were divided into two equal groups: Group A and Group B, Group A were Experimental, (N=100) and B was Control (N=100). The age of the subjects was ranging between 12 to 18 years.

Criterion Measured and Tool Used:

Dependent and Independent Variables: 26 weeks extended yogic program was an independent variable and three psychological and four physiological variables dependent variable

Psychological Variables:

a) Attitude – Attitude Opinionnaire (Hamare Dristikona) of N.S. Chauhan and Saroj Arora [5]

b) Aggression – Aggression Inventory (A. Inventory) of M. K. Sultania of Agra [6]

c) Anxiety – Comprehensive anxiety test (C.A.Test) of Dr. Harish Sharma, Dr. R.L. Bhardwaj and Dr. Mahesh Bhargava of Agra [7]

Physiological Variables:

a) Blood Pressure - Sphygmomanometer and stethoscope

b) Pulse Rate -- Manually through Redial artery

c) Vital Capacity -- Dry Spirometer (Developed and manufactured by Lovely Electronics, Lampur Road, Bankner, Rajasthan.)

d) Cardiovascular Endurance -- Harvard Step Test

The hypothesis of the Study:

Null Hypothesis: $H_0=H_1$ (There will be no effect of the extended 26-week yogic program on the selected psychological and physiological variables of the juvenile prison inmates)

Alternate Hypothesis: $H_0 \neq H_1$ (There will be a significant effect of the extended 26-week yogic program on the selected psychological and physiological variables of the juvenile prison inmates)

The 26 Weeks Yogic Program: A twenty-six-week extended yogic training programme was developed with the help of yoga experts and related literature. This yogic program was executed on the experimental group after the pre-data-collection, up to six months thrice a week for 1 hour (except Sunday). The duration of practice was pre-decided for a maximum two hour a day but jail authority allowed for only for one hour due to their daily schedule. The yogic practice included the several selected activities from Astanga Yoga, Hath Yoga, Kriya yoga and Shatkarms including Surya Namaskar. It had been practiced throughout the 26 weeks of a duration of the study.

Data Collection: Data were collected on selected 7 dependent variables before and after the 26-week extended program using standardized tools and procedures in the Indian context.

RESULTS AND DISCUSSION:

This study was taken to find out the effect of the yogic program on the selected psycho-physiological variables of prisoners. In this experimental study the effect of the logic program as an independent variable were tested on the following psychological variables; Attitude, aggression and anxiety and physiological variables; Blood pressure; Cardio-vascular endurance; Vital capacity as dependent variables.

a) Attitude:

Table no. 1 (i)

Comparison of mean difference of experimental and control group in an attitude

		Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
ATTITUDE	Pre	-5.98	0.74	-8.12*	198.00	0.00
	Post	-11.92	0.81	-14.73*	198.00	0.00

(The mean difference is significant at the 0.05level.)

www.ignited.in

Table no. 1 (ii)

Analysis of covariance for the means of the experimental, control and adjusted group in an attitude

			Sum of Squares	df	Mean Square	F	Sig.
ATTITUDE	Pre	Between Groups	1788.020	1	1788.020	65.931*	.000
		Within Groups	5369.660	198	27.119		
	Post	Between Groups	7104.320	1	7104.320	216.956*	.000
		Within Groups	6483.600	198	32.745		
	Adjusted	Between Groups	3000.618	1	3000.618	249.519*	.000
		Within Groups	2369.042	197	12.026		

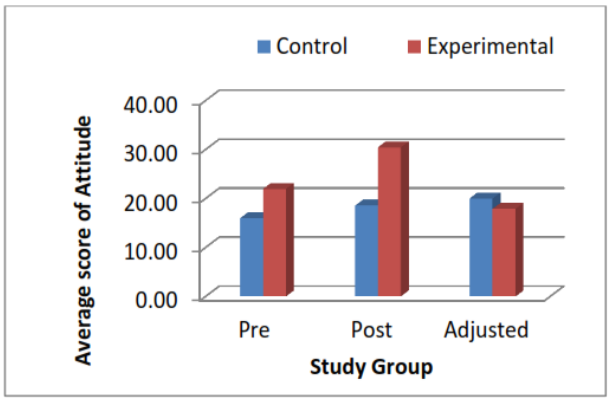
(The mean difference is significant at the 0.05level.)

Findings: Table no. 1 (i) showed that the comparison of means on Attitude of the experimental and control group was significantly different. It showed that with 198 df, 't' 14.73 is greater than the need for significance at 0.05 level of significance. Table no.1 (ii) showed that the analysis of covariance on Attitude of the experimental, control and adjusted groups were significantly different. The table revealed an F ratio value (249.52 w) which is highly significant. Since it was found higher than the tabulated F value required to be significant.

Discussion on Findings: Hence this statistical finding clearly implies that the yogic program had a significant effect on Attitude. On the basis of the above findings, the null hypothesis is rejected and the alternative hypothesis is accepted. The findings support the study of J P. Sharma and D.C. Sharma. [8] The significant improvement also depicted through the following graph.

Graph No. 1

Pre-test means, post-test means and adjusted means of the experimental, Control and adjusted group on Attitude



b) Aggression:

Table no. 2 (i)

Comparison of mean difference of experimental and control group in aggression

		Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
AGGRESSION	Pre	1.52	1.04	1.46**	198.00	0.14
	Post	10.16	0.81	12.53*	198.00	0.00

(The mean difference is significant at the 0.05level.)

Table no. 2 (ii)

Analysis of covariance for the means of the experimental, control and adjusted group in aggression

			Sum of Squares	df	Mean Square	F	Sig.
AGGRESSION	Pre	Between Groups	115.520	1	115.520	2.144**	.145
		Within Groups	10666.560	198	53.872		
	Post	Between Groups	5161.280	1	5161.280	156.966*	.000
		Within Groups	6510.540	198	32.882		
	Adjusted	Between Groups	7173.530	1	7173.530	404.573*	.000
		Within Groups	3493.030	197	17.731		

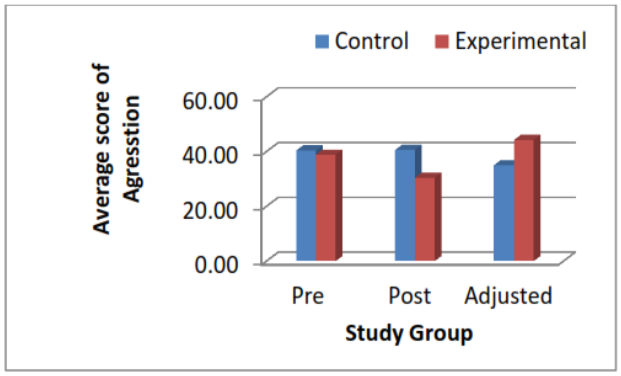
(The mean difference is significant at the 0.05level.)

Findings: Table no. 2 (i) showed that the comparison of means on the aggression of the experimental and control group was significantly different. It showed that with 198 df, 't' 12.53 is greater than the need for significance at 0.05 level of significance. Table no.2 (ii) showed that the analysis of covariance on the aggression of the experimental, control and adjusted groups were significantly different. The table revealed an F ratio value 404.57 which is highly significant. Since it was found higher than the tabulated F value required to be significant.

Discussion on Findings: Hence this statistical finding clearly implies that the yogic program had a significant effect on aggression. On the basis of the above findings, the null hypothesis is rejected and the alternative hypothesis is accepted. The findings support the study of Dr. Parag Joshi and M. Javanbakth, et. al. [9] The significant improvement also depicted through the following graph.

Graph No. 2

Pre-test means, post-test means and adjusted means of the Experimental, control and adjusted group on aggression



c) Anxiety:

Table no. 3 (i)

Comparison of mean difference of experimental and control group in Anxiety

		Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
ANXIETY	Pre	-0.40	1.12	-0.36**	198.00	0.72
	Post	6.44	1.11	5.79*	198.00	0.00

(The mean difference is significant at the 0.05level.)

Table no. 3 (ii)

Analysis of covariance for the means of the experimental, Control and adjusted group in Anxiety

			Sum of Squares	df	Mean Square	F	Sig.
ANXIETY	Pre	Between Groups	8.000	1	8.000	.128**	.721
		Within Groups	12406.320	198	62.658		
	Post	Between Groups	2073.680	1	2073.680	33.531*	.000
		Within Groups	12245.100	198	61.844		
	Adjusted	Between Groups	7561.062	1	7561.062	307.420*	.000
		Within Groups	4845.258	197	24.595		

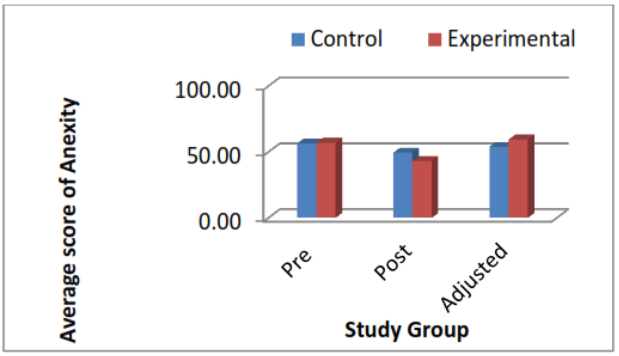
(The mean difference is significant at the 0.05level.)

Findings: Table no. 3 (i) showed that the comparison of means on the anxiety of the experimental and control group was significantly different. It showed that with 198 df, 't' 5.79 is greater than the need for significance at 0.05 level of significance. Table no.3 (ii) showed that the analysis of covariance on the anxiety of the experimental, control and adjusted groups were significantly different. The table revealed an F ratio value 307.42 which is highly significant. Since it was found higher than the tabulated F value required to be significant.

Discussion on Findings: Hence this statistical finding clearly implies that the yogic program had a significant effect on anxiety. On the basis of the above findings, the null hypothesis is rejected and the alternative hypothesis is accepted. The findings support the study of Dr. Parag Joshi and M. Jadhav Bhakt. [9] The significant improvement also depicted through the following graph.

Graph No. 3

Pre-test means, post-test means and adjusted means of the Experimental, control and adjusted group on Anxiety



Physiological Variables:

A) (i) Diastolic Blood pressure:

Table no. 4 (i)

Comparison of mean difference of experimental and control group in diastolic blood pressure

		Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
B P DIASTOLIC	pre	-2.04	0.91	-2.23*	198.00	0.03
	post	-1.69	0.64	-2.64*	198.00	0.01

(The mean difference is significant at the 0.05level.)

Table no. 4 (ii)

Analysis of covariance for the means of the experimental, control and adjusted group in diastolic blood pressure

			Sum of Squares	df	Mean Square	F	Sig.
BP DIASTOLIC	Pre	Between Groups	208.08	1	208.08	4.99*	0.03
		Within Groups	8256.24	198	41.70		
	Post	Between Groups	142.81	1	142.81	6.99*	0.01
		Within Groups	4045.59	198	20.43		
	Adjusted	Between Groups	6018.822	1	6018.822	529.945*	.000
		Within Groups	2237.418	197	11.357		

(The mean difference is significant at the 0.05level.)

Findings: Table no. 4 (i) showed that the comparison of means on Diastolic blood pressure of the experimental and control group was significantly different. It showed that with 198 df, 't' value 2.64 is greater than the need for significance

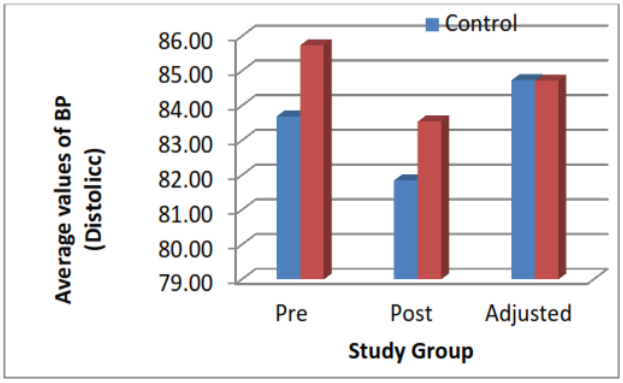
www.ignited.in

at 0.05 level of significance. Table no.4 (ii) showed that the analysis of covariance on Diastolic blood pressure of the experimental, control and adjusted groups were significantly different. The table revealed an F ratio value 529.94 which is highly significant. Since it was found higher than the tabulated F value required to be significant.

Discussion on Findings: Hence this statistical finding clearly implies that the yogic program had a significant effect on Diastolic blood pressure. On the basis of the above findings, the null hypothesis is rejected and the alternative hypothesis is accepted. The findings support the study of Dr. U S. Tripathi & Dr. Rajeev Choudhary.[10] The significant improvement also depicted through the following graph.

Graph No. 4

Pre-test means, post-test means and adjusted means of the Experimental, control and adjusted group on Diastolic blood pressure



(ii) Systolic Blood Pressure

Table no. 5 (i)

Comparison of mean difference of experimental and control group in systolic blood pressure

		Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
BP SYSTOLIC	pre	-0.40	1.12	-0.36**	198.00	0.72
	post	-1.90	0.77	-2.46*	198.00	0.01

(The mean difference is significant at the 0.05level.)

Table No. 5 (ii)

Analysis of covariance for the means of the experimental, control and adjusted group in tension

			Sum of Squares	df	Mean Square	F	Sig.
BP (SYSTOLIC)	Pre	Between Groups	8.00	1	8.00	0.13**	0.72
		Within Groups	12371.50	198	62.48		
	Post	Between Groups	180.50	1	180.50	6.05*	0.01
		Within Groups	5907.00	198	29.83		
	Adjusted	Between Groups	8460.780	1	8460.780	426.20*	.000
		Within Groups	3910.720	197	19.851		

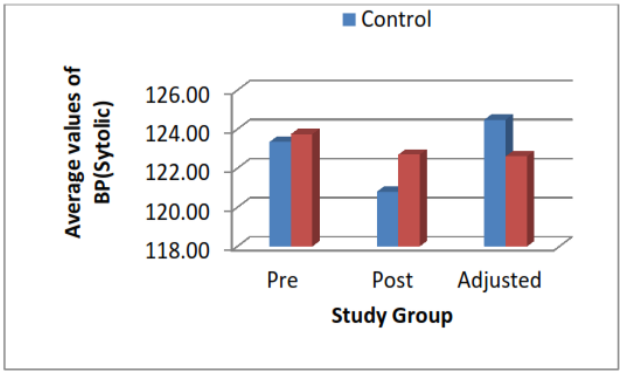
(The mean difference is significant at the 0.05level.)

Findings: Table no. 5 (i) showed that the comparison of means on Systolic blood pressure of the experimental and control group was significantly different. It showed that with 198 df, 't' 2.46 is greater than the need for significance at 0.05 level of significance. Table no.5 (ii) showed that the analysis of covariance on Systolic blood pressure of the experimental, control and adjusted groups were significantly different. The table revealed an F ratio value 426.20 which is highly significant. Since it was found higher than the tabulated F value required to be significant.

Discussion on Findings: Hence this statistical finding clearly implies that the yogic program had a significant effect on Systolic blood pressure. On the basis of the above findings, the null hypothesis is rejected and the alternative hypothesis is accepted. The findings support the study of Dr. U S. Tripathi & Dr. Rajeev Choudhary. [10] The significant improvement also depicted through the following graph.

Graph No. 5

Pre-test means, post-test means and adjusted means of the experimental, control and adjusted group on Systolic blood pressure



www.ignited.in

iii) Cardiovascular Endurance:

Table no. 6 (i)

Comparison of mean difference of experimental and control group in cardio vascular endurance

		Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
C V ENDURANCE	pre	-2.32	1.24	-1.87*	198.00	0.06
	post	-9.86	1.02	-9.62*	198.00	0.00

(The mean difference is significant at the 0.05level.)

Table no. 6 (ii)

Analysis of covariance for the means of the experimental, control and adjusted group in CV Endurance

			Sum of Squares	df	Mean Square	F	Sig.
C.V.ENDURANCE	Pre	Between Groups	269.12	1	269.12	3.48**	0.06
		Within Groups	15300.38	198	77.27		
	Post	Between Groups	4860.98	1	4860.98	92.62*	0.00
		Within Groups	10391.64	198	52.48		
	Adjusted	Between Groups	7978.612	1	7978.612	214.673*	.000
		Within Groups	7321.768	197	37.166		

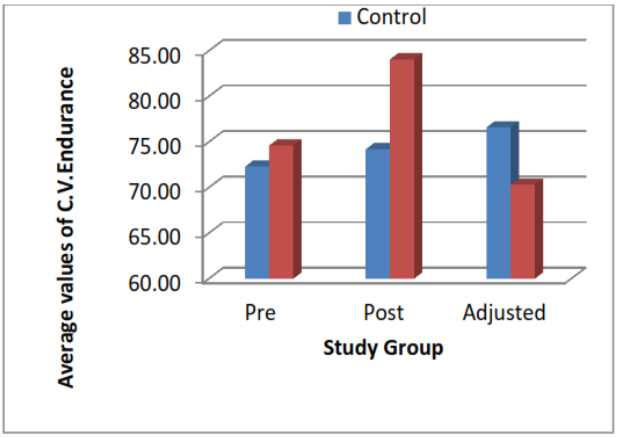
(The mean difference is significant at the 0.05level.)

Findings: Table no. 6 (i) showed that the comparison of means on CV Endurance of the experimental and control group was significantly different. It showed that with 198 df, 't' -9.62 is greater than the need for significance at 0.05 level of significance. Table no. 6 (ii) showed that the analysis of covariance on CV Endurance of the experimental, control and adjusted groups were significantly different. The table revealed an F ratio value 214.67 which is highly significant. Since it was found higher than the tabulated F value required to be significant.

Discussion on Findings: Hence this statistical finding clearly implies that the yogic program had a significant effect on CV Endurance. On the basis of the above findings, the null hypothesis is rejected and the alternative hypothesis is accepted. It supports the study of Dr. S. K. Gosh [11]. The significant improvement also depicted through the following graph.

Graph No. 6

Pre-test means, post-test means and adjusted means of the experimental, control and adjusted group on CV Endurance



iv) Vital Capacity:

Table no. 7 (i)

Comparison of mean difference of experimental and control groups in Vital Capacity

		Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
VITAL CAPACITY	pre	-4.00	46.33	-0.09**	198.00	0.93
	post	-122.00	46.61	-2.62*	198.00	0.01

(The mean difference is significant at the 0.05level.)

Table no. 7 (ii)

Analysis of covariance for the means of the experimental, control and adjusted group in Vital capacity

			Sum of Squares	df	Mean Square	F	Sig.
VITALCAP	Pre	Between Groups	800.00	1	800.00	0.01**	0.93
		Within Groups	21248000.00	198	107313.13		
	Post	Between Groups	744200.00	1	744200.00	6.85*	0.01
		Within Groups	21508600.00	198	108629.29		
	Adjusted	Between Groups	18867474.73	1	18867474.7	1561.375*	.000
		Within Groups	2380525.267	197	12083.885		

(The mean difference is significant at the 0.05level.)

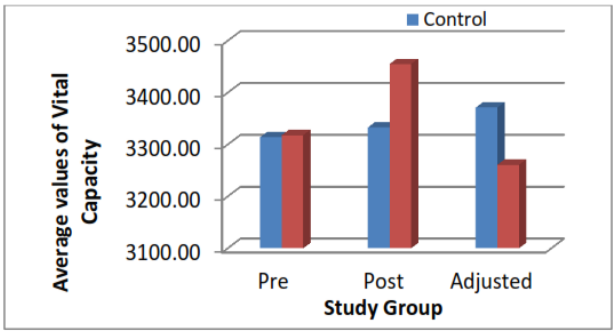
Findings: Table no. 7 (i) showed that the comparison of means on the vital capacity of the experimental and control group was significantly different. It showed that with 198 df, 't' 2.62 is greater than the need for significance at 0.05 level of significance. Table no.7 (ii) showed that the analysis of covariance on the vital capacity of the experimental, control and adjusted groups were significantly different. The table revealed an F ratio value 1561.37 which is highly significant. Since it

was found higher than the tabulated F value required to be significant.

Discussion on Findings: Hence this statistical finding clearly implies that the yogic program had a significant effect on vital capacity. On the basis of the above findings, the null hypothesis is rejected and the alternative hypothesis is accepted. The findings support the study of Bhole M.V., Karmbelkar P.V. [12] The significant improvement also depicted through the following graph.

Graph No. 7

Pre-test means, post-test means and adjusted means of the experimental, control and adjusted group on vital capacity



v) Pulse Rate:

Table no. 8 (i)

Comparison of mean difference of experimental and control group in Pulse rate

		Mean Difference	Std. Error Difference	t	df	Sig. (2-tailed)
PULSE RATE	Pre	-0.19	0.55	-0.35**	198.00	0.73
	Post	0.20	0.46	0.43**	198.00	0.67

(The mean difference is significant at the 0.05level.)

Table no. 8 (ii)

Analysis of covariance for the means of the experimental, control and adjusted group in pulse rate

			Sum of Squares	df	Mean Square	F	Sig.
PULSE RATE	Pre	Between Groups	1.80	1	1.80	0.12**	0.73
		Within Groups	2956.79	198	14.93		
	Post	Between Groups	2.00	1	2.00	0.19**	0.67
		Within Groups	2116.38	198	10.69		
	Adjusted	Between Groups	2742.557	1	2742.557	2521.945*	.000
		Within Groups	214.233	197	1.087		

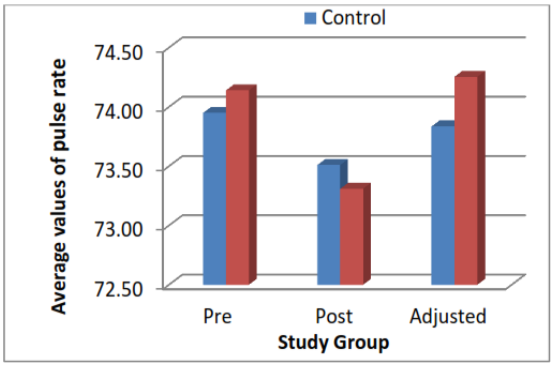
(The mean difference is significant at the 0.05level.)

Findings: Table no. 8 (i) showed that the comparison of means on Pulse Rate of the experimental and control group was not significantly different. It showed that with 198 df, 't' 0.43 is lower than the need for significance at 0.05 level of significance. Table no. 8(ii) showed that the analysis of covariance on Pulse Rate of the experimental, control and adjusted groups were not significantly different. The table revealed an F ratio value 0.19 which is highly insignificant. Since it was found lower than the tabulated F value required to be significant.

Discussion on Findings: Hence this statistical finding clearly implies that the yogic program had an insignificant effect on Pulse Rate. On the basis of the above findings, the null hypothesis is accepted and the alternative hypothesis is rejected. The findings support the study of S. K. Gosh [11]. The significant improvement also depicted through the following graph.

Graph No. 8

Pre-test means, post-test means and adjusted means of the experimental, control and adjusted group on Pulse rate



CONCLUSION:

Within the limitations of the study, It has been concluded from the results that; in psychological variables attitude of the juvenile prison inmates in the experimental group has been significantly improved simultaneously aggression and anxiety has been significantly reduced after 26 weeks extended the logic program. Whereas in Physiological variables blood pressure (Diastolic and Systolic) of juvenile prison inmates in experimental group has been seen more close to health standard, Vital Capacity and Cardio-Vascular Efficiency has also been improved due to 26 weeks extended yogic program but the pulse rate of the juvenile prison inmates has remained unchanged in the experimental group and control group. Hence it can be clearly stated that 26 weeks of the extended yogic program can significantly contribute to the change of attitude, aggression, the anxiety of the juvenile prison inmates [13] and help them to join the mainstream of the society. [14] Finally, Different yogic programs could be part of jail reforms in India and abroad.

REFERENCES:

1. S. K. Ganguly (2009). "Yogic practices for holistic health and fitness", Vyayam Vidnyan, Vol.42, No.3, Aug. 2009, p. 23.
2. Dr. A. N. Khodaskar (2006). “Yoga Swasthya Kungi”; Amravati, Maharashtra, January 2006, p. 11
3. Nicole Tomlinson (2007). "Yoga in Ontario prison" St. Lawrence Valley Correctional Center, Brookville on. Aug. 2007
4. Lila Rucker (2005). "Yoga and restorative justice in prison: An experience of response-ability harm". Contemporary Justice Review, Vol. 8, Issue I, March 2005: pp. 107-120.
5. N. S. Chauhan and Saroj Aurora (1997). Hamarey- Dristicona (Attitude Scale); (Meerut: Manovigyan Anushandhanpeeth; 1997), p.p-1-8
6. A.H Buss and A. Durkee (1957). "An inventory f or assessing a different kind of hostility", Journal of Consulting Psychology, Vol. 21, 1957: pp. 343-348.
7. Dr. R. L Bhardwaj, Dr. H. Sharma and Dr. M. Bhargave: ‘Comprehensive Anxiety test’, Agra.
8. Jai Prakash Sharma & D.C. Sharma (2004). “A Study of Effect of Yogic Training on Attitude of Secondary School Level Boys.” Vyayam Vidyan, Vol. 37, No. 3, August 2004.
9. Parag Joshi (2008). "Effect of Yogic Practices Performed on Deviants Aggression, Anxiety and Impulsiveness in Prison", Unpublished Thesis, Amravati University, 2008
10. Dr. U.S. Tripathi & Dr. Rajeev Choudhary (2004). "Effect of 12-week physical education and yogic programmes on selected physiological variables on mentally retarded students", Indian Journal Physical Education, Sports Medicine and Exercise Science, Vol. No.1 & 2 Jan. & July 2004 : pp. 52-58
11. S. K. Ghosh (2003). "Effect of Physical Exercises, Yogic Practices, and their Combined Training on Selected Physiological Variables among High School Boys" Yoga- Mimansa, Vol. XXXV, No. 1 & 2; 15-25, April 2003 & July 2003
12. Bhole M.V. Karmvelkar P. V. (1971). "Effects of yoga training on vital capacity and breath holding time -A study", Yoga Mimansa 14 (3and 4) 1971
13. Scientific Research Department, Kaivalyadhama: "Yoga for prevention and control of suicidal tendency and restoring mental health in Indian adolescent students", Published on www.kavalyadham.com.
14. John C. Kimbrough (2008). Teaching yoga in Cambodian prison –pain laughter, awakening and enlighten; www.yogalink.blogspot.com; 2008.

Corresponding Author

Kanhaiya Kumar Singh*

Ph.D., Assistant Professor, Sports Academy, Bahir Dar University, Ethiopia, Africa

kanhaiyasingh107@gmail.com