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Influence of short-term combined specific task hatha yoga and corporeal exercise on physiological variables of working women

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Abstract

This study will be useful to identify the desirable changes in select issues consisting of corporeal and functional components of working women due to a combination of Hatha yoga training and physical exercise. The subjects selected for this study were working women who were studying in zones in Coimbatore district, Tamil Nadu. A total of eighty (N=80) working women were selected for the systematic sample used. The subjects ranged from 25 to 30 years. In this design, subjects are assigned to the experimental and control group's systematic sample and are given a pre-test on the dependent variables for 80 working women's and divided into four equal groups of twenty each. Group I underwent Hatha yoga training group (HYTG), Group II underwent physical exercise (PEG), Group III underwent combined Hatha yoga training with physical exercise (CHYPEG) and IV-underwent control group (CG). The training session was conducted three days a week over a period of twelve weeks. The data will be taken for both groups before and after the experimental period of twelve weeks. The results of comparative effects lead to conclude that combined Hatha yoga training with physical exercise and physical exercise training group has significant improvement in physiological variables.

Keywords: Resting heart rate, systolic blood pressure, diastolic blood pressure

Introduction

Hatha Yoga is the most ancient and traditional form of yoga. The word Hatha directly translates as Sun/Moon. "Ha" means 'Sun' and "Tha" means 'moon.' This original style of yoga brings both sun and moon energies together creating the perfect balance.

It brings body purification and an awakening of vital energy, which flows in our body through energy channels, throughout the body, called Nadis. To break down the meaning of the word 'Hatha' further - 'Ha' is also known as 'Pingala' or 'Surya Nadi' (Sun) which is the energy that flows in the right side of body and "Tha" is also known as the 'Ida Nadi' or 'Chandra Nadi' (Moon) which is the energy which flows in the left side of the body. Hatha yoga according to Maharshi Patanjali is a system to calm the modifications of the mind or as Patanjali says "Chitta Vritti Nirodhah" meaning 'to stop the fluctuations of the mind. When you experience everything as oneness in your consciousness, then you are in yoga. To attain that unity within you, there are many ways. You work with the body, then you move to the breath, then to the mind, then to the inner self. Like this, many steps have been created, but they are only different facets of yoga. It is important that all of them are addressed in a very balanced way, all at once, as one single unit. There is really no division as such; yoga employs all aspects of who you are.

Hatha yoga does not exercise. Understanding the mechanics of the body, creating a certain atmosphere, and then using body postures to drive your energy in specific directions is what hatha yoga or yogasanas are about. "Asana" means a "posture." That kind of posture which allows you to reach your higher nature is a yoga asana. There are other dimensions to this, but to put it in the simplest way, just by observing the way someone is sitting, you can almost know what is happening with him, if you have known him long enough. If you have observed yourself, when you are angry, you sit one way; if you are happy, you sit another way; if you are depressed, you sit another way. For every different level of consciousness or mental and emotional situation that you go through, your body naturally tends to assume certain postures.

The converse of this is the science of asanas. If you consciously get your body into different postures, you can elevate your consciousness. The body can become a means for your spiritual growth or it can become a major barrier. Suppose some part of your body – your hand, leg or back, for instance – is hurting. When it is hurting badly it is hard to aspire for anything higher because that becomes the biggest thing. Right now if you have a backache, the biggest thing in the universe is your backache. Other people may not understand that, but for the person who is going through it, that is the biggest thing. Even if God appears you will ask for your backache to go! You will not ask for anything else because the physical body has such a power over you. If it is not functioning well, it can take away all other aspirations from your life. Whatever you may fancy, all your longings just disappear once the body starts hurting – because to look beyond that takes an enormous amount of strength, which most people do not possess.

Physiology is the study of the functions of the normal human body. The physiological trials depend upon the race, and geographical and climatic conditions of human beings. Physiology is one of the biomedical sciences. It deals with the functions of the living organism. The goal of physiology is to gain in right into the machinery of the human organism the roles and interaction of its parts and the resultant output of their interactions, i.e. the overall functioning of the organism.

Materials and Methods

The subjects selected for this study were working women who were studying in zones in Coimbatore district, Tamil Nadu. A

total of eighty (N=80) working women were selected for the Quota sample used. The subjects ranged from 25 to 30 years. In this design, subjects are assigned to the experimental and control group's systematic sample and are given a pre-test on the dependent variables for 80 working women and divided into four equal groups of twenty each. Group I underwent Hatha yoga training group (HYTG), Group II underwent physical exercise (PEG), Group III underwent combined Hatha yoga training with physical exercise (CHYPEG) and IV-underwent control group (CG). The training session was conducted three days a week over a period of twelve weeks. The data will be taken for both groups before and after the experimental period of twelve weeks.

List of Criterion Variables and Standardized Test

Sl.No.	Variables	Test Items	Units of measurement
Physiological Variables			
1.	Resting heart rate	BP Monitor	In pulse/min
2.	Systolic blood pressure	BP Monitor	In mm/Hg
3.	Diastolic blood pressure	BP Monitor	In mm/Hg

Reliability Co-Efficient for Criterion Variables

S.No.	Criterion Variables	Co-efficient of correlation "r"
1.	Resting heart rate	0.97
2.	Systolic blood pressure	0.94
3.	Diastolic blood pressure	0.95

Results and Discussion

Table 1: Analysis of covariance of HYTG, PEG, CHYPEG and CG on resting heart rate (In pulse)

	HYTG	PEG	CHYPEG	CG	Source of variance	Sum of squares	df	Mean square	F-value
Pre-test	78.05	79.55	82.35	79.93	BG	190.56	3	63.52	0.91
					WG	5262.15	76	69.23	
Post-test	71.30	74.21	77.70	78.72	BG	2007.96	3	669.32	4.15
					WG	12237.56	76	161.02	
Adjusted Mean	73.13	74.61	75.43	79.76	BG	1664.14	3	554.71	5.58
					WG	7448.25	75	99.31	

Table 2: Analysis of covariance of HYTG, PEG, CHYPEG and CG on systolic blood pressure (In mm/Hg)

	HYTG	PEG	CHYPEG	CG	Source of variance	Sum of squares	df	Mean square	F-value
Pre-test	118.34	121.12	112.67	123.94	BG	985.42	3	328.44	1.42
					WG	17482.60	76	230.03	
Post-test	106.58	108.55	103.28	122.45	BG	2293.72	3	764.57	4.16
					WG	13965.73	76	183.75	
Adjusted Mean	114.53	119.71	113.64	121.96	BG	2354.24	3	784.74	11.01
					WG	5342.74	75	71.23	

*Significant level 0.05 level

Table 3: Analysis of covariance of HYTG, PEG, CHYPEG and CG group on diastolic blood pressure (In mm/Hg)

	HYTG	PEG	CHYPEG	CG	Source of variance	Sum of squares	df	Mean square	F-value
Pre-test	86.94	84.44	87.62	80.54	BG	461.08	3	153.69	1.99
					WG	5853.74	76	77.02	
Post-test	76.95	78.68	75.34	80.14	BG	689.62	3	229.87	4.90
					WG	3565.34	76	46.91	
Adjusted Mean	73.58	78.98	77.61	80.66	BG	994.89	3	331.63	19.28
					WG	1290.04	75	17.20	

*Significant level 0.05 level

Table 1 show that the adjusted post-test means on resting heart rate of the Hatha yoga training group (HYTG), physical exercise training group (PEG), combination of Hatha yoga and physical exercise training group (CHYPEG) and control group (CG) are 73.13, 74.61, 75.43 and 79.76 respectively and

the obtained F ratio is 5.58. Since the obtained F ratio of 5.58 for adjusted post-test means on resting heart rate is higher than the required table value of 2.72, it is found to be significant at 0.05 level of confidence for 3 and 75 degrees of freedom.

Table 2 show that the adjusted post-test means on systolic blood pressure of Hatha yoga training group(HYTG), physical exercise training group (PEG), combination of Hatha yoga and physical exercise training group(CHYPEG) and control group(CG) are 114.53, 119.71, 113.64 and 121.96 respectively and the obtained F ratio is 11.01. Since the obtained F ratio of 11.01 for adjusted post-test means on systolic blood pressure is higher than the required table value of 2.72, it is found to be significant at 0.05 level of confidence for 3 and 75 degrees of freedom.

Table 3 show that the post-test means on diastolic blood pressure of the Hatha yoga training group(HYTG), physical exercise training group (PEG), combination of Hatha yoga and physical exercise training group(CHYPEG) and control group(CG) are 73.58, 78.98, 77.61 and 80.66 respectively and the obtained F ratio is 19.28. Since the obtained F ratio of 19.28 for adjusted post-test means on diastolic blood pressure is higher than the required table value of 2.72, it is found to be significant at 0.05 level of confidence for 3 and 75 degrees of freedom.

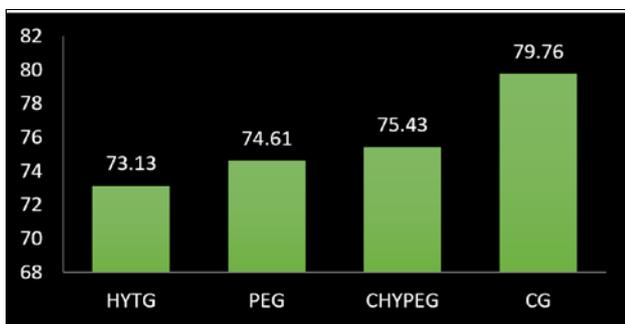


Fig 1: The Adjusted Post Tests Mean Values OFHYTG, PEG, CHYPEG and CG Onresting Heart Rate (In pulse)



Fig 2: The Adjusted Post Tests Mean Values of HYTG, PEG, CHYPEG and CG on Systolic Blood Pressure (In mm/Hg)



Fig 3: The Adjusted Post Tests Mean Values OFHYTG, PEG, CHYPEG and CG on diastolic blood pressure (In mm/Hg)

Conclusion

The results of comparative effects lead to conclude that physical exercise training group (PEG) has significant improvement in physiological variables Resting Heart Rate of working women as compared to their performance with either, Control group (CG) and a combination of the Hatha yoga and physical exercise training group (CHYPEG) alone. It was further concluded that the combination of Hatha yoga

and physical exercise training group (CHYPEG) showed greater improvements in Systolic blood pressure and Diastolic blood pressure of Col level of working women as compared to their performance with either Hatha yoga training group (HYTG) or physical exercise training group (PEG).

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