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Effect of yogasanas and meditation on selected physiological variables of college women

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Abstract

The purpose of the study was to assess the effect of Yoga practices and Meditation on selected physiological variables of college women. In this study statistical population included 90 selected subjects from St. Thomas College Kozhencherry, Pathanamthitta, Kerala. The selected subjects were not involved in any kind of physical activity before. The necessary data was collected from the criterion measures. The criterion measures chosen to test hypotheses were Body weight, Resting pulse, Pulse rate, Blood pressure (Systolic & Diastolic). Random group design was used in this study. The subjects numbering ninety female students were divided into Experiment group I (N: 30) Yoga experiment group, II (N:30) Meditation experiment group and a control group III (N:30). The experimental group I was given a set of 12 yogic asanas and experimental group II was given a meditation training for a period of 3 months. The subjects had undergone the training 3 days in a week. Twelve selected yogic asanas suitable for women subjects selected are Suriyanamaskar, Virabhradrasana II, Vrikshasana, Trikonasana, Vijrasana, Naukasana, Bhnjanjgasana, Ushtrasana, Salabhasana, Virasana, Paschimotasana, Savasana were included in the training programme. In the training programme the experimental group II underwent the listening meditation. In the first 2 weeks of the training programme the subjects were made to relax for 10 minutes in Savasana by deep breathing and then gave them 15 minute listening meditation. The next weeks they were allowed to sit in any of meditative posture and then allowed to concentrate towards relaxation music for 15 minutes after 5 minutes savasana relaxation. To determine the difference between pre -test and post test results 't' test was computed for each of the selected variables. Analysis of t ratio for the data pre and post- test of experimental group and control group in variables among yoga practice revealed the following conclusions. It is revealed that in the case of most of the physiological variables such as heart rate, resting pulse rate and blood pressure shows significant changes following 3 month yoga training program. From the findings we can understand that the body weight of experimental group had shown significant difference. But the differences are just above the significant value. There were significant changes in the heart rate for the experimental group. It is suggested that performing suryanamaskara improves the cardio vascular fitness. As an aerobic exercise suriya namaskara seems to be ideal as it involves both static stretching and slow dynamic component of exercise with optimal stress on the cardio respiratory system. The resting pulse of the experimental group decreases following yoga training programme It might be due to the yogasanas which would have been strenuous enough to bring about an improvement in the efficiency of the heart and respiratory muscles. The significant difference in the systolic blood pressure may be due to effect of yogic techniques. The result of the study also reveals that there will be no significant changes in the body weight variables of meditation practice group.

Keywords: Physiological, women, yogasanas, and meditation

Introduction

Yoga' is a Sanskrit term meaning 'to join, unite or yoke together', and the essential purpose of yoga is to bring together body, mind and spirit into a harmonious whole. Yoga is not only beneficial for the body but also for the mind. It helps to improve blood flow and helps in building mind clarity (Potash and Buckle, 2001) [3]. For ages, yoga was known to be beneficial for our physical & mental health. It not only help us to stay calm but also help us to lose weight. Yoga is a systematic practice of physical exercise, breath control, relaxation, diet control, and positive thinking and meditation aimed at developing harmony in the body, mind, and environment. The central methods of yoga are physical postures or 'asanas' and movement, breathing techniques or 'pranayama' and meditation. The body in yoga is the vehicle for the development of wisdom, of spiritual awakening, and as such the body is held

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to be sacred and mastery of our body is considered the foundation for spiritual progress. Yoga is not only beneficial for the body but also for the mind (Swami sathyanda saraswathi 1981) [1]. It helps to improve blood flow and helps in building mind clarity. For ages, yoga was known to be beneficial for our physical & mental health. It not only help us to stay calm but also help us to lose weight In yoga we learn a discipline of the body which comes out of awareness and attentiveness, tuning in to our body's subtle energy flows and the life-giving rhythm of our breathing. Yoga is a systematic practice of physical exercise, breath control, relaxation, diet control, and positive thinking and meditation aimed at developing harmony in the body, mind, and environment. Improved flexibility and builds muscle strength is one of the most obvious benefits of yoga. Strong muscles do more than look good. They also protect us from conditions like arthritis and back pain, and help prevent falls in elderly people (Tainni, 1961) [6]. And when you build strength through yoga, you balance it with flexibility. If you just went to the gym and lifted weights, you might build strength at the expense of flexibility. Many postures in yoga require that you lift your own weight (Brayant, 1968) [2]. And some, like Downward- and Upward-Facing Dog, help strengthen the arm bones, which are particularly vulnerable to osteoporotic fractures. When you contract and stretch muscles, move organs around, and come in and out of yoga postures, you increase the drainage of lymph (a viscous fluid rich in immune cells). This helps the lymphatic system fight infection, destroy cancerous cells, and dispose of the toxic waste products of cellular functioning. People who meditate are less stressed, healthier, sleep better, and have a more positive outlook on life. Meditation makes you a happier person, one of the most important elements of meditation is focusing on your practice. Meditation can also reduce the areas of anxiety, chronic pain, depression, heart disease and high blood pressure. Daily meditation can help you perform better at work. Research found that meditation helps increase your focus and attention and improves your ability to multitask. Meditation helps clear our minds and focus on the present moment – which gives you a huge productivity boost.

Criterion measures and collection of data

The criterion measures chosen to test hypotheses were, Body weight, Resting pulse rate, Heart rate, Blood pressure- (Systolic & Diastolic).

Experimental Design: Random group design was used in this study. The subjects numbering ninety female students were divided in to Experiment group I (N: 30) Yoga experiment group, II (N:30) Meditation experiment group and a control group III (N:30). The experimental group I was given a set of 12 yogic asanas and experimental group II was given a meditation training for a period of 3 months. The subjects had under gone the training 3 days in a week. Twelve selected yogic asanas were included in the training programme.

Selection of the yogic Asanas

After reviewing the literature, performing to yoga and its contribution to the development of various systems in the body, the researcher was selected twelve yogic asanas suitable for womensubjects. Suriyanamaskar, Virabhadrasana II, Vrikshasana, Trikonasana, Vijrasana, Naukasana, Bhnjanjgasana, Ushtrasana, Salabhasana, Virasana, Paschimotasana, Savasana.

Listening Meditation Techniques

Listening meditation had been practicing since the Vedic age. Its main intention is to relax the body and mind. Thus develops a positive thinking and as a result the mental health is improved. In the training programme the experimental group II underwent the listening meditation. In the first 2 weeks of the training programme the subject were made to relax for 10 minutes in Savasana by deep breathing and then gave them 15 minute listening meditation. The next weeks they were allowed to sit in any of meditative posture and then allowed to concentrate towards relaxation music for 15 minutes after 5 minutes savasana relaxation.

Statistical Analysis

To determine the difference between pre- test and post test results 't' test was computed for each of the selected variables.

Table 1: Analysis of t ratio for the data pretest and posttest of Experimental group and Control group in Physiological Variables of Yoga Practice Group

Variables	Group	No	Initial	Final	Mean	SE	t value
Body weight	Experimental group	30	46.60	46.20	.40	.507	2.76*
	Control group	30	46.28	46.26	.02	.024	.83
Heart Rate	Experimental group	30	70.433	68.533	1.9	0.297	6.40*
	Control group	30	70.0	70.23	0.23	0.171	1.37
Resting Pulse rate	Experimental group	30	81.88	81.16	.72	.17	4.12*
	Control group	30	82.8	82.52	.28	.34	.83
Systolic blood Pressure	Experimental group	30	116.80	114.933	1.868	0.507	3.68*
	Control group	30	126.333	126.533-	0.2	0.242	0.83
Diastolic blood pressure	Experimental group	30	76.20	76.40	0.80	0.354	2.26
	Control group	30	81.467	81.733	0.267	0.159	1.68

Significant at 0.01 level of confidence 0.01 (29) 2.756

Analysis of Table reveals Body weight of experimental group with a 't' value of 2.76, which is little higher than the required 't' value. The control group showed significant difference with 't' value of 0.83, also shows that significant effect of yoga practices on heart rate of experimental group with a 't' value of 6.40 which is much higher than the required t value. The control group showed no significant difference with a value of 1.37. From the above table it is found that resting pulse rate of experimental group with a t value of 4.12 which

is higher than the required t value. The control group showed no significant difference with a value of .83. Diastolic blood pressure of experimental group with a t value of 2.26. The control group also showed no significant difference with a t value of 1.68. Systolic blood pressure of experimental group with a t value of 3.68 which is higher than the requirement t value. The control group showed no significant difference with a value of 0.83.

Table 1: Analysis of t ratio for the date pre- test and post-test of physiological variables among Meditation practice group

Variables	Groups	No	Initial Mean	Final Mean	Mean Difference	SE	t value
Body weight	Experiment group	30	45.23	45.21	0.021	0.241	0.91
	Control group	30	46.52	46.4	-0.12	0.931	.92
Heart rate	Experiment group	30	68.42	66.92	1.5	0.298	4.21*
	Control group	30	68.21	68.42	-0.21	0.01	.89
Resting pulse rate	Experiment group	30	80.81	79.70	1.11	.34	3.16*
	Control group	30	80.02	79.94	.80	.83	0.17
Diastolic blood pressure	Experiment group	30	121.21	120.8	.44	.30	1.46
	Control group	30	121.8	121.72	.08	.83	.17
Systolic blood pressure	Experiment group	30	115.50	115.30	0.2	0.242	0.83
	Control group	30	121.33	121.54	0.021	0.251	0.85

Significant at 0.01 level of confidence, t 0.01 (29) 2.756

Analysis of table reveals that no significant difference of meditation practices group on body weight of Experimental group with t value of 0.91 which is lesser than the required value. The control group also showed no significant difference with a value of 0.92. Table also reveals a significant effect of meditation practices on heart rate of Experimental group with a t value of 4.21 which is much higher than the required t value. The control group showed no significant difference with a value of 0.89. The findings shows a significant effect of meditation practices on resting pulse rate of experimental group with a t value of 3.16. which is higher than the required t value. The control group showed no significant differences with a value of 0.17. From the table we can understate that no significant effect of meditation practices on diastolic blood pressure of Experiential group with a t value of 1.46 which is much lesser than the required t value. The control group also showed no significant difference with a value of 0.17.

Discussion on Findings

The subject of the study were teenage female students who were not engaged in any sort of physical activity. From the table it is revealed that in the case of most of the physiological variables such as heart rate, resting pulse rate and blood pressure shows significant changes following 3 month yoga training program. From the findings we can understand that the body weight of experimental group had shown significant difference. But the differences are just above the significant value. It may be the reason that while undergoing yoga training programmes subject must have controlled their diet (Reference from More house and Mille, Physiology of exercise). There were significant changes in the heart rate for the experimental group. On the basis of the reviews (swami satyananda Saraswati, 2001). It is suggested that performing suryanamaskara improves the cardio vascular fitness. As an aerobic exercise suriya namaskara seems to be ideal as it involves both static stretching and slow dynamic component of exercise with optimal stress on the cardio respiratory system. The resting pulse of the experimental group decreases following yoga training programme It might be due to the yogasanas which would have been strenuous enough to bring about an improvement in the efficiency of the heart and respiratory muscles. Thus resulting in the decreased pulse rate which is considered to be an indicator of better fitness. (The significant difference in the systolic blood pressure may be due to effect of yogic techniques. The result of the study also reveals that there will be no significant changes in the body weight variables of meditation practice group It may be the reason that the meditation practices are not enough to bring any changes in the body weight as it does not have any

physical exhaustion.

It is revealed that there were significant changes in resting pulse rate and heart rate of meditation practices group. These findings suggest that different meditative/breathing protocols may evoke common heart rate effects, as well as specific responses. There were no significant changes in blood pressure variables for the meditation training group. It may be the reason that meditation practices is not enough to bring changes in blood pressure (Ashok and sncha 2013) [5].

Conclusion

Although aerobic exercise improves physiological functioning and psychological health. Yoga therapy suggest that yoga is an integral programme of mind and body fitness which holds and even greater potential for improving well being. Yoga is a Systematic technology to improve the body understand the mind and free the spirit. Within the limitations of the study and on the basis of the results obtained the following conclusions were drawn. The assessment on Yoga training revealed the following conclusion. Yoga training group shows significant difference in Resting pulse and Heart rate. Yoga training group shows comparatively slight significant differences on Body weight and Blood pressure. The assessment on Meditation practices reveals the following conclusions. Meditation practices group shows significant difference in Resting pulse and Heart rate. There were no significant changes in pre- test and post-test of meditation practices group on Body weight and Blood pressure. Summing up the 3 month training programme of Yoga and Meditation had significant effect on Physiological variables. Thus such training may be recommended to improve the physiological efficiency and also it is recommended to manage the health conditions.

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