International Journal of Engineering Research and Modern Education (IJERME)
Impact Factor: 7.018, ISSN (Online): 2455 - 4200
(www.rdmodernresearch.com) Volume 5, Issue 1, 2020

COMBINED EFFECT OF YOGIC PRACTICE WITH AEROBIC DANCE ON SELECTED ANTHROPOMETRICAL VARIABLES AMONG OVERWEIGHT STUDENTS

Dr. M. Srinivasan
Assistant Professor, Sri Ramakrishna Mission Vidyalaya Maruthi College of Physical Education, Coimbatore, Tamilnadu

Cite This Article: Dr. M. Srinivasan, "Combined Effect of Yogic Practice with Aerobic Dance on Selected Anthropometrical Variables among Overweight Students", International Journal of Engineering Research and Modern Education, Volume 5, Issue 1, Page Number 30-33, 2020.

Abstract:

The purpose of the study is to find out the combined effect of yogic practice with aerobic dance on selected anthropometrical variables among overweight students. The researcher randomly selected thirty boys from Velliangadu Panchayat, Coimbatore, Tamil Nadu, India, as subjects. Their age was between eighteen to twenty-five years. A pre and post-test control group design was employed for this investigation. This study consisted of an experimental group (n=15) that underwent yogic practice and aerobic dance, and (n=15) acted as the control group. All the participants were tested before and after the experimentation on anthropometrical variables namely waist circumferences and body mass index measured by a standardized test with tools. The experiment group participated in yogic practice and aerobic dance for twelve weeks. The control group did not have any specific training program. The pre-test and post-tests were conducted to mention the variables. The training program was scheduled at 60 min for six days a week.'t' ratio was used to find out the significant difference between the pre-test and post-test of each independent variable on the selected dependent variables. ANCOVA was calculated to find out the significant difference between the independent variables on the selected dependent variables. The levels of significance were fixed at 0.05. Since the obtained "F" ratio value was significant to find out the paired mean difference.It was concluded that the yogic practice with the aerobic dance group showed statistically positive signsthroughout the training period on the selected anthropometrical variables such as speed waist circumferences and body mass index among overweight students.It was concluded that the yogic practice & aerobic dance group showed statistically significant improvement in the variables namely waist circumferences and body mass index throughout the training period. It was concluded that the control group showed no significant improvement in variables namely waist circumferences and body mass index.It was concluded that the yogic practice & aerobic dance has a significant difference fromthe control group on selected anthropometrical variables among overweight students.

Introduction:

Yoga is an unenviable classical treatise that originated and perfected on Indian soil throughout millennia(Aiyasamy, 2019). Pranayama is an exact science. It is the fourth Anga or limb of Ashtanga Yoga. "Tasmin Sati SvasaprasvasayogativicchedahPranayamah" Regulation of breath or the control of Prana is the stoppage of inhalation and exhalation, which follows after securing that steadiness of posture or seat, Asana. Thus is Pranayama defined in Patanjali Yoga Sutras.„Svasa" means inspiratory breath and 'Prasvasa' is expiratory breath. (Swami Kuvalayananda, 1983). The term aerobic means "with oxygen." During an aerobic workout, the cardiovascular system (heart, lungs, and blood vessels) increases the amount of oxygen in muscles as physical activity increases. Aerobic activity involves an exercise routine that uses large muscle groups, is maintained for a sustained period, and is rhythmic (Thaxton, 1988).

Methodology:

For this purpose, the researcher randomly selected thirty boys from Velliangadu Panchayat, Coimbatore, Tamil Nadu, India, as subjects. Their age was between eighteen to twenty-five years. A pre and post-test control group design was employed for this investigation. This study consisted of an experimental group (n=15) that underwent yogic practice and aerobic dance, and (n=15) acted as the control group. All the participants were tested before and after the experimentation on anthropometrical variables namely waist circumferences and body mass index measured by a standardized test with tools. The experiment group participated in yogic practice and aerobic dance for twelve weeks. The control group did not have any specific training program. The pre-test and post-tests were conducted to mention the variables. The training program was scheduled at 60 min for six days a week.

Training Programme:

The training in the yogic practices and aerobic dance activities was given to the experimental groups for 12 weeks as follows:

- Training period: 12 weeks
- Training sessions: 6 days per week

- Duration of one session: 60 minutes

Post-tests were conducted for both the groups in all the selected variables as in the pre-tests.

Every training session lasted for 60 minutes. The training program was scheduled for the evening between 5.00 pm and 6.00 pm. The control group was not exposed to any specific training. The subjects underwent their respective program under strict supervision before and during every session. Subjects underwent a 10 minutes warm-up and 10 minutes of cool-down exercises that included jogging and stretching. The details about the training program are given below. The optimum cardio respiratory zone is found between 70 and 85 percent training intensities. However, individuals who have been physically inactive or are in the poor or fair cardiorespiratory fitness categories should use 60 % intensity during the first few weeks of the exercise program (Heyward, 2002).

Statistical Techniques:

't' ratio was used to find out the significant difference between the pre-test and post-test of each independent variable on the selected dependent variables. ANCOVA was calculated to find out the significant difference between the independent variables on the selected dependent variables. The levels of significance were fixed at 0.05. Since the obtained "F" ratio value was significant to find out the paired mean difference.

Results on Waist Circumference:

Table 1: Computation ofthe 't' ratio of the experimental andcontrol group on the waist circumference

Group	Test	Mean	SD	Standard Error of the Mean	Correlation	"t" ratio	Sig.	Table value
Experimental Group	Pre-test	92	2.14	0.55205	0.99	12.48*	0	2.14
	Post-test	90.87	2.1	0.54219				
Control Group	Pre-test	92	3.16	0.8165	0.99	1.87	0	
	Post-test	92.2	3.19	0.82347				

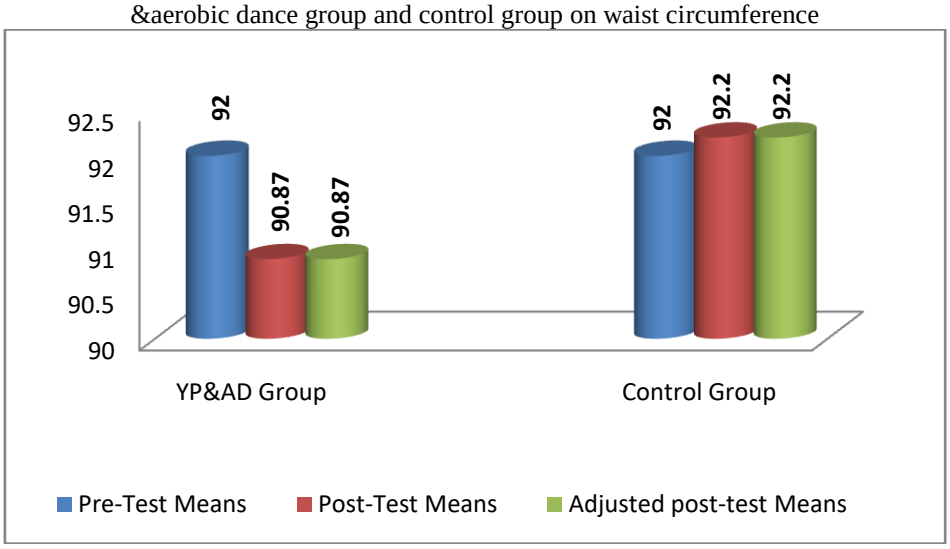
From table I the pre-test and post-test mean value of the experimental group on waist circumference is 92.00 and 90.87 respectively. The standard deviation of the pre-test and post-test of the experimental group on waist circumference is 2.14 and 2.10 respectively. The obtained't' value of the experimental group on waist circumference is 12.48 at a 0.05 level of confidence. It was greater than the required table value of 2.14 at a 0.05 level of confidence.The pre-test and post-test mean values of the control group on waist circumference are 92.00 and 92.20 respectively. The standard deviation of the pre-test and post-test of the control group on waist circumference is 3.16 and 3.19 respectively. The obtained't' value of the control group on waist circumference is 1.87 at a 0.05 level of confidence. It was less than the required table value of 2.14 at a 0.05 level of confidence.Finally,the results of the study showed that the experimental group had a significant improvement in waist circumference. The control group had an insignificant difference in waist circumference.

Table 2: Computation of analysis of covariance of yogicpractice & aerobic dance group and control group on waist circumference

	YP&AD Group	Control Group	Sourceof Variance	Sum of Squares	df	Mean Squares	F-ratio
Pre-Test Means	92.00	92.00	BG	0.00	1	0.00	0.01
			WG	204.00	28	7.29	
Post-Test Means	90.87	92.20	BG	13.33	1	13.33	1.83
			WG	204.13	28	7.29	
Adjusted post-test Means	90.87	92.20	BG	13.33	1	13.33	87.51*
			WG	4.11	27	0.15	

An examination of Table - II indicates the results of ANCOVA for pre-test scores of the yogic practice & aerobic dance group and control group. The obtained F-ratio for the pre-test is 0.05 (P>0.05) indicating that the random sampling is successful and the table F ratio is 4.20. Hence the pre-test means F-ratio is insignificant at a 0.05 level of confidence for the degree of freedom 1 and 28.The obtained F-ratio for the post-test is 1.83 (P<0.05) and the table F ratio is 4.20. Hence the post-test mean F-ratio is insignificant at a 0.05 level of confidence for the degree of freedom 1 and 28.The adjusted post-test means of yogic practice & aerobic dance group and control group are 90.87 and 92.20 respectively. The obtained F-ratio for the adjusted post-test means is 87.51 (P <0.05) and the table F-ratio is 4.21. Hence the adjusted post-test mean waist circumference F-ratio is significant at a 0.05 level of confidence for the degree of freedom 1 and 27.Pre-test, post-test, and adjusted post-test mean difference of the yogic practice & aerobic dance group and control group on waist circumference are presented in Figure 1.

Figure 1: Bar diagram showing the pre-test, post-test, and adjustedpost-test mean difference of yogic practice &aerobic dance group and control group on waist circumference



Results on Body Mass Index:

Table 3: Computation of ratio of experimental andControl group on body mass index

Group	Test	Mean	SD	Standard Error of the Mean	Correlation	"t" ratio	Sig.	Table value
Experimental Group	Pre-test	28.60	0.99	0.25448	0.89	5.30*	0.00	2.14
	Post-test	27.93	0.71	0.18170				
Control Group	Pre-test	28.40	0.51	0.13093	0.76	1.87	0.00	
	Post-test	28.60	0.63	0.63246				

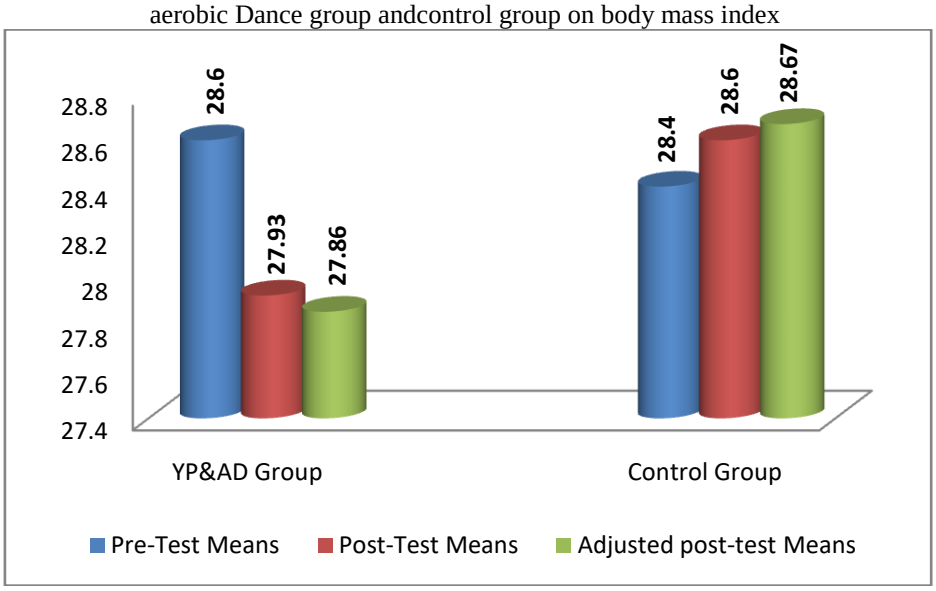
From table 3 the pre-test and post-test mean values of the experimental group on body mass index are 28.60 and 27.93 respectively. The standard deviation of the pre-test and post-test of the experimental group on body mass index is 0.99 and 0.71 respectively. The obtained't' value of the experimental group on body mass index is 5.30 at a 0.05 level of confidence. It was greater than the required table value of 2.14 at a 0.05 level of confidence. The pre-test and post-test mean values of the control group on body mass index are 28.40 and 28.60 respectively. The standard deviation of the pre-test and post-test of the control group on body mass index is 0.51 and 0.63 respectively. The obtained't' value of the control group on body mass index is 1.87 at a 0.05 level of confidence. It was less than the required table value of 2.14 at a 0.05 level of confidence. Finally,the results of the study showed that the experimental group had a significant improvement in body mass index. The control group had an insignificant difference in body mass index.

Table 4: Computation of analysis of covariance of yogicPractice & aerobic dance group andcontrol Group on body mass index

	YP & AD Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	F-ratio
Pre-Test Means	28.60	28.40	BG	0.30	1	0.30	0.49
			WG	17.20	28	0.61	
Post-Test Means	27.93	28.60	BG	3.33	1	3.33	7.45*
			WG	12.53	28	0.45	
Adjusted post-test Means	27.86	28.67	BG	4.79	1	4.79	31.09*
			WG	4.16	27	0.15	

An examination of Table - IV indicates the results of ANCOVA for pre-test scores of the yogic practice & aerobic dance group and control group. The obtained F-ratio for the pre-test is 0.05 (P>0.05) indicating that the random sampling is successful and the table F ratio is 4.20. Hence the pre-test means F-ratio is insignificant at a 0.05 level of confidence for the degree of freedom 1 and 28.The obtained F-ratio for the post-test is 7.45 (P<0.05) and the table F ratio is 4.20. Hence the post-test mean F-ratio is significant at a 0.05 level of confidence for the degree of freedom 1 and 28.The adjusted post-test means of yogic practice & aerobic dance group and control group are 27.86 and 28.67 respectively. The obtained F-ratio for the adjusted post-test means is 31.09 (P <0.05) and the table F-ratio is 4.21. Hence the adjusted post-test mean body mass index F-ratio is significant at a 0.05 level of confidence for the degree of freedom 1 and 27.Pre-test, post-test, and adjusted post-testmean difference of the yogic practice & aerobic dance group and control group on body mass index are presented in Figure 2.

Figure 2: Bar diagram showing the pre-test, post-test, andadjusted post-test mean difference of yogicpractice & aerobic Dance group andcontrol group on body mass index



Discussion on Findings:

Waist Circumference:

The results ofthe ratio indicate that there is a significant improvement in waist circumference due to the effect of yogic practice & aerobic dance (YD&AD) and there is no significant improvement control group of overweight students. Regarding the statistical analysis of covariance, it is observed that there is a significant difference in waist circumference between the adjusted post-test means of two groups namely, yogic practice & aerobic dance, and a control group of overweight students. The results of the study have also been supported by the following authors Sekar babu &Kulothugan (2011) and Ranbir Singh (2019) whose studies brought about similar results.

Body Mass Index:

The results of't' the ratio indicate that there is a significant improvement in body mass index due to the effect of yogic practice & aerobic dance (YD&AD) and there is no significant improvement control group of overweight students. Regarding the statistical analysis of covariance, it is observed that there is a significant difference in body mass index between the adjusted post-test means of two groups namely, yogic practice & aerobic dance, and a control group of overweight students. The results of the study have also been supported by the following authors Punithavathi (2010), Toy (2008), and KyoungBae Kim & Yun A Shin (2020) whose studies brought about similar results.

Conclusion:

- It was concluded that the yogic practice withthe aerobic dance group showed statistically positive signsthroughout the training period on the selected anthropometrical variables such as speed waist circumferences and body mass index among overweight students.
- It was concluded that the yogic practice & aerobic dance group showed statistically significant improvement in the variables namely waist circumferences and body mass indexthroughout the training period.
- It was concluded that the control group showed no significant improvement in variables namely waist circumferences and body mass index.
- It was concluded that the yogic practice & aerobic dance has a significant difference from than control group on selected anthropometrical variables among overweight students.

References:

1. Kyoung-BaeKim., & Yun-A Shin. (2020).Males with Obesity and Overweight. Obesmetabsyndr2020 Mar 30; 29(1): 18–25. Published online.
2. Punithavathi., (2010). Effects of Aerobic Exercises and Yogic Practices on Selected Physical, Anthropometrical and Biochemical Variables among School Girls.Unpublished Doctoral Thesis: Pondicherry University, Pondicherry.
3. Ranbir Singh. (2019). Impact of yogic training and aerobic training on selected physicaland anthropometrical parameters among athletes, Sports journals,8, 12.
4. SekarBabu.K., & P. Kulothugan. (2011). Effect of Yogic Practices on Selected Anthropometrical Variables of Men Hockey Players, Recent Treads in Yoga and Physical Education,I,.321.