



Effect of low impact aerobic dance exercise on VO₂ Max among sedentary men of Kannur (District) of Kerala

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ABSTRACT: The present study investigated the effect of twenty four weeks of low-impact aerobic dance exercise on VO₂ Max among sedentary working men of Kannur district of Kerala state. Sedentary participants (age range = 30 – 40 years; N = 40) were randomly selected and assigned to two groups: experimental and control group. Training was administered to the experimental group for 50 minutes, 3 days per week, for 24 weeks. Paired t-Test revealed statistically significant effects for VO₂ Max of sedentary men. Further, In order to eliminate the covariate factor Analysis of Covariance (ANCOVA) for the criterion variables were also found only to reveal the same significant difference in VO₂ Max in the experimental group compared to the control group. Subjects of the experimental group, “aerobic dancing group” experienced the most benefits.

KEYWORDS: VO₂ Max (Maximal Aerobic Capacity), Low Impact Aerobic Dance

I. INTRODUCTION

Aerobic exercise and physical activities provide the individual with a number of lasting benefits as not only do they help Physical Variables and Aerobic capacity but they also improve biochemical well-being. Aerobic dance exercise is one of the most common exercise practices in the world .Presently, aerobic dance is a popular activity, performed by small groups of all ages, and is more popular among middle-aged men and women. Music with slow or fast rhythm helps to control and pace the movement of selected body segments allowing for an overall body workout. As with other forms of aerobic exercise, aerobic dance performed within a target heart rate of between 50% and 70% of the maximal heart rate (MHR) by using Karvonen Equation, has demonstrated physiological benefits of increased Maximal Aerobic Capacity (VO₂ Max). **Physiological impact of aerobic exercise:** Dance aerobic workout strengthens the body including the weight bearing bones and cardiovascular muscles. It helps to lose weight as well as builds our body muscles. It is also suitable for those who want to tone their muscles. It is one of the easiest aerobic exercises, which can be enjoyed by people of all age groups, both men and women. However, elderly people should perform the exercise either for short duration or with precautions. It is not recommended for very small children and pregnant women. The exercise increases blood circulation and lowers blood sugar and cholesterol levels. Aerobic dance workout increases the circulation of oxygen to heart, lungs and blood vessels for smooth functioning of the body. The workouts enhance the efficiency of heart and lungs. It is a great stress buster. It is an interesting activity that deviate us from the drudgery of everyday life. It is an effective remedy for depression, anxiety and tension. Thus, it is helpful for the rejuvenation of the mind. Dance aerobics is a good workout to boost up the immune system (www.livesstrong.com). The link between VO₂ Max and aerobic dance has been fairly well established through long term studies. Exercise of a lesser dose will provide fewer to no benefits, and exercise of a greater dose will provide additional benefits. In this study, the investigator was interested in analyzing the effects that low-impact aerobic dance exercise has on VO₂ Max. In the study the researcher had applied a pre and post test to compare the effectiveness of VO₂ Max after a low impact aerobic dance being administered among sedentary men of Kannur district of Kerala.

II. MATERIALS AND METHODS

Paired t-test and ANCOVA was used to examine the effect of low impact aerobic dance exercise on dependent variable of sedentary men. The Study was carried out in the School of physical education and sports sciences, Kannur University. The research was performed on a sample of 40 sedentary working men in Kannur district of

Kerala. Further to that, their age ranged from 30-40 years, subjects were randomly assigned in control group (n=20) and in the experimental group (n=20). The experimental group meets 3 times a week on Mondays, Wednesdays, and Fridays from 4.30pm to 5.30pm in aerobics room while the control group met similar days and venue but at 5.30pm to 6.30pm. Group 1, the experimental group, receives treatment between the pre-test and post-test where subjects have to go through 72 sessions, 50 minutes each (15 mts warm up + 20 minutes aerobic workout + 15 minutes warm down). On the other hand, Group 2, the control group was instructed not to do any kind of physical exercises. This inventory was based on the result of the data collected by the standardized Rock Port One mile walk test. For experimental group one day prior to the treatment and the last day of the training schedule. For control group, one day prior to the instruction and the last day of their disposal.

III. RESULTS AND ANALYSIS

TABLE-I: Paired samples t-test for VO₂ Max

PAIRED VARIABLES		MEAN	STD. DEVIATION	t	Sig.(2 tailed) p
Pair 1	EX.PRE-VO ₂ max- EX.POST-VO ₂ max	-3.781	2.635	-6.417*	.000
Pair 2	CT.PRE.VO ₂ max- CT.POST-VO ₂ max	1.263	1.564	3.611*	.002

Table value= 2.09

The obtained result for the pair 1 (t = - 6.417, p = 0.000) indicated that low impact aerobic dance training programme significantly improved VO₂ max of sedentary men.

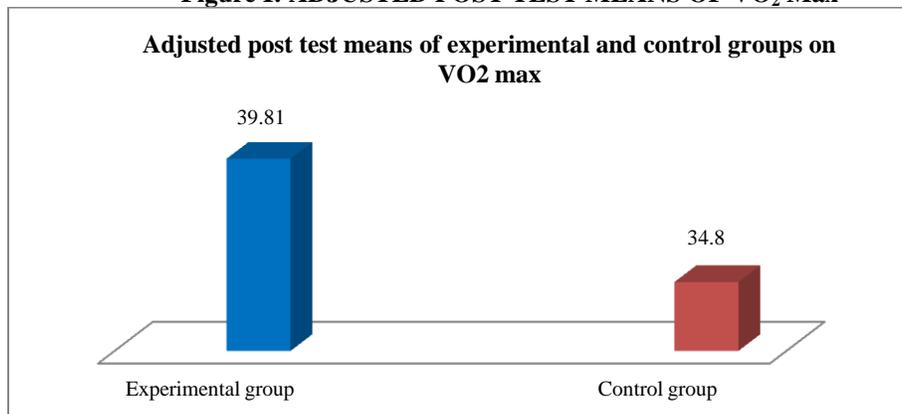
TABLE-II: ANALYSIS OF COVARIANCE COMPUTED FOR EXPERIMENTAL GROUP AND CONTROL GROUP FOR VO₂ Max

TESTS		EXPERIMENTAL GROUP	CONTROL GROUP	SOV	SS	DF	MS	F-ratio
PRE TEST	Mean	35.93	36.16	BW	0.51	1 38	0.51	0.017
	SD	5.66	5.23		1131.55		29.77	
POST TEST	Mean	39.71	34.90	BW	232.08	1 38	232.08	9.75*
	SD	4.06	5.57		903.66		23.78	
ADJUSTED POST TEST	Mean	39.81	34.80	BW	250.30	137	250.3	65.21*
					142.01		3.83	

Table value: 4.10, *Significance at 0.05 levels

From the Table-II it is clear that there was no significant difference in the Pre test means between experimental group and the control group since the obtained F value 0.017 was less than the table value 4.10 with df 1 and 38 at 0.05 level of confidence. The F value 9.75 for the Post test proved to be statistically significant since it was greater than the table value of 4.10 with df 1 and 38 at 0.05 level of confidence. Further the F value 65.21 for the Adjusted Post test mean also proved to be significant since it was greater than the table value of 4.11 with df 1 and 37 at 0.05 level of confidence. It is understood from the result that there was a significant improvement in the level of VO₂ max for the experimental group than the control group due to the low impact aerobic dance training programme.

Figure I: ADJUSTED POST TEST MEANS OF VO₂ Max



VO₂ Max (Maximal Aerobic Capacity): On the basis of the result obtained it was concluded that a low impact aerobic dance training programme significantly improved VO₂ max of sedentary men which was in consonance with

the findings of the studies conducted by Igbanugo and Gulin(1978) and Forte.,et al,(2001) and by the literature by Tudor.O. Bumpa in his classical text “Periodization: theory and methodology of training (4th Edn)” (1999). The low impact aerobic dance training intensity which was fixed at 50% - 70% of maximum heart rate and the duration of the training period of 24 weeks would have influenced the experimental group’s blood circulation which increased blood flow to subjects muscles and back to their lungs . Furthermore during low impact aerobic dancing the subjects repeatedly moved large muscles in arms, legs and hips which forced the subjects to breathe faster and deeper resulting in receiving more oxygen in subject’s blood thus influencing the VO₂ max in a significant manner.

IV. CONCLUSIONS

All of these research efforts work towards improving the future of preventative medicine and achieving better well-being and lifestyle of employed sedentary men suffering from Diabetes and High cholesterol levels to improve performance and increase productivity in their career. In short, a low-impact aerobic dance exercise routine is indeed simple and cost-effective. It is a fun and safe way to exercise for people from all lifestyles. Ultimately, a low-impact exercise routine improves the population’s Physiological well being by increasing VO₂ Max as it promotes quality.

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