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IMPACT OF HIGH AND MEDIUM INTENSITY AEROBIC DANCE ON LOWER BACK AND HAMSTRING FLEXIBILITY AMONG HIGH SCHOOL BOYS

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Abstract:- The purpose of the present study was to find out the impact of high and medium intensity aerobic dance on lower back and hamstring flexibility among high school boys. To achieve this purpose, forty five (n = 45) high school boys were selected as subjects at random. The age of the subjects were ranged between 13 and 15 years. The selected subjects were further divided into three equal groups such as high intensity aerobic dance, medium intensity aerobic dance groups and the control group of fifteen (n =15) each. The training groups were underwent for systematic high and medium aerobic dance training for twelve weeks duration as three sessions in a week. The flexibility was taken as a criterion variable for the present study and sit and reach test was used as a test item. The data were collected before and immediately after the training duration. The collected data were analyzed statistically by using analysis of covariance (ANCOVA). The level of confidence was fixed at 0.05 in all aspects. The results of the study show that the high and medium intensity aerobic dance training group have significant improvement ($p \leq 0.05$) lower the back and hamstring flexibility as compare to the control group and there was an insignificant difference ($p \geq 0.05$) occurred between the medium and high intensity aerobic dance training groups on lower back and hamstring flexibility to each other. It was further concluded that the aerobic dance training is better for improving the quality of flexibility among the selected high school boys.

Keywords:aerobic dance, flexibility, high intensity, medium intensity, high school boys.

INTRODUCTION

Aerobic dance is a system of exercises combining aerobics with dance steps and usually done to music (Random House Unabridged Dictionary, 1997). In other words, it is a form of aerobic exercise developed in 1969 an American, Jacki Sorensen. A typical routine consists of flexibility, warm-up, followed by 20 to 30 minute dance routine, and ending with cooling down routine and stretching exercises (Segen's Medical Dictionary, 2012).

Dancers are known for being flexible and in good shape, and it is true that dancing offers a great workout and many health benefits. Not only does it work all major muscle groups, but it also requires coordination, flexibility and strength. Modern dancing or dance aerobics focus on coordination, while other forms of dancing, like ballet, are more focused on form. In addition, dance is a form of personal expression and enjoyment, which means it, is good for our body and our mind.

Flexibility is the range of motion in a joint or group of joints, or the ability to move joints effectively (Jennifer, 2014). Unlike aerobic and strength exercises, the specific health benefits of flexibility activities are unclear. However, health professionals believe that improving our flexibility can improve our posture, reduce aches and pains and lower the risk of injury. Good flexibility can also help us to continue to carry out everyday tasks.

MATERIALS AND METHODS

The purpose of the present study was to find out the impact of high and medium intensity aerobic dance on lower back and hamstring flexibility among high school boys. To achieve this purpose, forty five (n = 45) high school boys were selected as subjects at random from G. V. H. S. S. Karadka, Kasaragod District in Kerala State. The age of the subjects were ranged between 13 and 15 years. The total strength was divided into three different groups of fifteen (n = 15) each in strength. The groups were named as high and medium intensity aerobic dance training groups and the control group. The training groups were underwent systematic, planned high and medium intensity aerobic dance training for twelve weeks duration with three sessions per week. The control group didn't do any special training programs apart from their regular activities. Flexibility was taken as a criterion variable for the current study and the test item were used to measure the flexibility was sit and reach. The data were collected before and after the training period. Mean and standard deviation were calculated for flexibility among the training groups and the control group. The data were analyzed by using analysis of covariance (ANCOVA). If the 'F' value was found to be significant for adjusted post-test mean, Scheffe's test was applied as a post hoc test to determine the significant difference between the paired mean. Statistical significance was fixed at 0.05 levels in all aspects.

RESULTS AND DISCUSSION

Table I
Analysis of Covariance on Lower Back and Hamstring Flexibility of High and Medium Intensity Aerobic Dance Training Groups and the Control Group

Test		HIATG	MIATG	CG	SOV	SS	df	MS	*F*
Pre test	Mean	26.06	25.93	26.13	B	0.17	2	0.089	0.007
	SD	3.81	3.63	3.59	W	568.8	42	13.54	
Post test	Mean	30.06	29.13	26.20	B	180.13	2	90.07	5.35*
	SD	4.26	4.34	3.67	W	707.07	42	16.84	
Adjusted Post test	Mean	31.02	29.22	26.15	B	181.6	2	90.79	21.94*
					W	169.7	41	4.14	

*Significant F = (df 2, 42) (0.05) = 3.22; (P ? 0.05) F = (df 2, 41) (0.05) = 3.23; (P ? 0.05)

The table I showed that the pre test mean values on lower back and hamstring flexibility for the high and medium intensity aerobic dance training groups and the control group were 26.06, 25.93 and 26.13 respectively. The obtained 'F' ratio of 0.007 for pre test, which was lower than the required table value 3.22 with df 2 and 42 at 0.05 level of confidence. The post test mean values of high and medium intensity aerobic dance training groups and the control group were 31.06, 29.13 and 26.20 respectively. The obtained 'F' ratio of 5.35 for post test, which was higher than the required table value of 3.22 with df 2 and 42 at 0.05 level of confidence. There was a significant difference in post test 'F' value on lower back and hamstring flexibility among the selected groups. The adjusted post test mean values of lower back and hamstring flexibility for the high and medium intensity aerobic dance training groups and the control group were 31.02, 29.22 and 20.15 respectively. The obtained 'F' ratio of 21.94 for adjusted post test, which was higher than the required table value of 3.23 with df 2 and 41 for significance at the 0.05 level of confidence. Hence, the results of the study showed that there was a significance difference exists between high and medium intensity aerobic dance training groups and the control group on lower back and hamstring flexibility among the selected subjects. Further to determine, which of the paired means has a significant improvement, Scheffe's test was applied as a post - hoc test.

Table - II
Scheffe's Test for the difference between the Adjusted Post-Test Mean of lower back and hamstring flexibility

Adjusted Post Test Mean			MD	*CI*
HIATG	MIATG	CG		
31.02	29.22	-	1.80	1.88
31.02	-	26.15	4.87*	
-	29.22	26.15	3.07*	

*Significant at 0.05 level of Confidence

Table II shows that, the adjusted post-test mean difference in lower back and hamstring flexibility between high and medium aerobic dance training groups were 1.80. It was lesser than the confidence interval value of1.88. Hence, there was an insignificant difference between the high and medium aerobic dance training groups on lower back and hamstring flexibility among the selected subjects. The mean difference of high intensity aerobic dance training group and the control group was 4.87. It was greater than the confident interval values of 1.88. It shows that, there was a significant difference in lower back and hamstring flexibility among high intensity aerobic dance training group and the control group. The mean difference of medium intensity aerobic training group and the control group was 3.07. The mean difference was greater than the confidence interval value of 1.88. It shows that, there was a significant difference in lower back and hamstring flexibility among the medium intensity aerobic dance training group and the control group at 0.05 levels. It was further concluded that, the high and medium intensity aerobic dance training protocols were better for improving the quality of lower back and hamstring flexibility among the selected subjects. The pre, post and adjusted post test mean values of high, medium and the control group on lower back and hamstring flexibility was graphically represented in the figure 1.

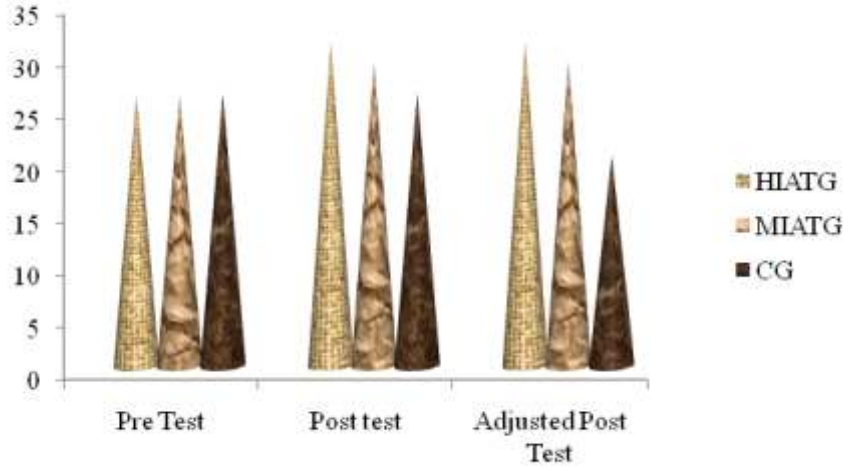

Figure 1: The pre, post and adjusted post test mean values of experimental groups and the control group on lower back and hamstring flexibility

RESULTS AND DISCUSSION

The result of the study indicated that, there was a significant difference occurred between the high and medium intensity aerobic dance training groups as compared with the control group on lower back and hamstring flexibility. And also there was an insignificant difference in lower back and hamstring flexibility among the high and medium intensity aerobic dance training groups. It further concluded that the high and medium intensity aerobic dance training was better for improving the quality of lower back and hamstring flexibility among the selected subjects. Okuneye et al. (2010) was examined the effects of a six-week low-impact aerobic dance on selected fitness components (trunk flexibility, leg power and abdominal muscle endurance) and waist-hip-ratio (WHR) in adult males. A total of fifteen (15) Lagos State University male undergraduates (age range: 19-28 years) from the Faculty of Education volunteered to take part in the study. And concluded that the aerobic dance has positive benefits for flexibility among the selected subjects. Mills (1994) also points the same positive benefits of flexibility and balance due to the impact of low intensity aerobic dance among the selected sedentary elderly persons. Huiving et al. (2012) conducted his study among the older female individual and described that the flexibility was one of the dependent variable for the systematic aerobic dance protocol. The studies of Yasmina et al. (2013), Manjappa and Shivaram (2013), Kalai and Maniazhagu (2014), Mathewos et al. (2013) and Vairavasundaram & Palanisamy (2014) also supportive of the findings of this study.

CONCLUSION

The result of the study indicated that, there was a significant difference occurred between the high and medium intensity aerobic dance training groups as compared with the control group on lower back and hamstring flexibility. And also there was an insignificant difference in lower back and hamstring flexibility among the high and medium intensity aerobic dance training groups. It further conclued that the high and medium intensity aerobic

dance training was better for improve the quality of lower back and hamstring flexibility among the selected subjects.

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