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LOW, MEDIUM AND HIGH DURATION AEROBIC DANCING ON MOTOR FITNESS AND PHYSIOLOGICAL COMPONENTS AMONG SCHOOL BOYS IN COASTAL AREA

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ABSTRACT

One hundred and twenty boys from St. Joseph's high school, Anjengo, Trivandrum district, Kerala, were selected at random and their age was between thirteen and fourteen. They were divided into four equal groups, namely, control group, experimental groups I, II and III. The low duration, medium duration and high duration aerobic dancing was given to the experimental group I, II and III for fifteen minutes, thirty minutes and forty-five minutes respectively for alternate days in a week for twelve weeks. 'F' ratio was used to determine the significant difference between the means through analysis of variance. The "F" ratio for the adjusted post-test means, was computed by analysis of co-variance. The levels of significance was fixed at 0.01.

Introduction

Aerobic dance is a physical activity that can provide an inexpensive and practical workout. Aerobic fitness helps to protect the cardio respiratory system from diseases and it promotes physical, mental, emotional and spiritual development. Aerobic dance can be started at any age and the intensity of the programme can also be suited to meet the larger needs of the individual. Warm up is necessary before starting the exercise programme or alternatively many of the aerobic programmes incorporate the warm-up and the limber-down as a part of the programme of aerobic dancing.

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Methodology

One hundred and twenty boys from St. Joseph's high school, Anjengo, Trivandrum district, Kerala, were selected at random and their age was between thirteen and fourteen years. They were divided into four equal groups, namely, control group, experimental groups I, II and III.

The low duration aerobic dancing was given to the experimental group I for fifteen minutes, three alternate days in a week for twelve weeks. The medium duration aerobic dancing was given to the experimental group II for thirty minutes, three alternate days in a week for twelve weeks. The high duration aerobic dancing was given to the experimental group III for forty-five minutes, three alternate days in a week for twelve weeks. The initial readings were taken from the subjects before administering the aerobic dancing. The subjects were involved with their respective duration of aerobic dancing for a period of twelve weeks. After twelve weeks, the final readings (post-test) were taken.

The significance of the difference between the means of control group, experimental groups I,II, and III for the pre-test and post-test mean gained were determined by F-ratio through analysis of variance. The 'F' ratio for the adjusted post-test means was computed by analysis of co-variance. The level of significance was fixed at 0.01 level of confidence for the degrees of freedom 3 and 115.

The repeated measures of analysis of variance was used to find out the periodical effects of low, medium and high duration aerobic dancing. The level of significance was fixed at 0.01 level of confidence for the degrees of freedom 3 and 116.

Analysis of the data and result of the study

The following results were obtained from the statistical analysis of covariance and the repeated measures of analysis of variance.

Table - I

Computation of analysis of speed, leg explosive power and agility

		Contro Gr.	Exp I	Exp II	Exp III	S V	SS	DF	MS	'F'
Speed	Pre test	8.603	8.280	8.53	8.763	B W	4.6 75.99	3 116	1.67 0.66	2.543
	Post test	8.79	7.880	8.327	8.770	B W	16.44 74.16	3 116	5.33 0.64	8.3604*
	Adjusted post test	8.573	8.780	8.364	8.664	B W	4.17 5.27	3 115	1.39 0.045	30.3094*
Leg explosive power	Pre test	1.745	1.822	1.715	1.949	B W	0.18 2.43	3 116	0.06 0.021	2.86
	Post test	1.764	1.851	1.794	1.748	B W	0.21 2.25	3 116	0.07 0.02	3.5 12.889
	Adjusted post test	1.7650	1.7951	1.8309	1.7557	B W	0.1027 0.3830	3 116	0.0342 0.52	10.363*
Agility	Pre test	11.773	11.493	11.693	11.767	B W	1.54 6.42	3 116	0.67 0.52	12.889
	Post test	11.750	11.423	11.423	11.910	B W	16.16 57.31	3 116	5.33 0.49	10.853
	Adjusted post test	11.663	11.412	11.412	11.829	B W	8.2348 3.2152	3 115	2.7449 0.0280	98.0321

Table value 'F' 0.01 level = 3.96 (3, 115), 3.95 (3, 116 degrees of freedom).

* Significant

Table - II

Computation of analysis of anaerobic power (watts), resting pulse rate (beats per minutes) and cardio respiratory endurance (scores in meters).

		Control Gr.	Exp I	Exp II	Exp III	S V	SS	DF	MS	F'
Anaerobic power (Scores in Watts)	Pre test	552.73	443.76	401.80	543.68	B	49247 4.78	3	1641 58.33	18.1152*
						W	1051 178.6	116	9061.89	
	Post test	551.72	476.13	416.64	527.34	B	316- 882.20	3	1056- 27.33	10.1409*
						W	1208 25375	115	1421. 898	8.2492*
	Adjusted post test	486.80	518.56	467.20	501.256	B	3515 8.52	3	11729 508	8.249*
						W	16351 8.3262	115	142.1 898	
resting pulse rate /beats/ minute	Pre test	75.13	76.33	74.20	77.20	B	156.90	3	52.33	1.0463
						W	58.0240	116	50.02	
	Post test	75.133	74.26	71.267	72.60	B	256.89	3	85.67	2.03
					W	4887.9	116	42.14		
Cardio respiratory endurance. (scores in meters)	Adjusted post test	75.6272	76.76427	2.5914	71.1839	B	3161. 468	3	105. 489	271.95*
						W	73681 6667	116	63518 .68	
	Pre test	2226.6 69	2180.0 0	2181.6 67	2261.6 67	B	13875 0.00	3	4625 0.00	0.6943
					W	22030 76.573	3	7343 58.358	139.364	

The obtained 'F' ratio (Table I and II) of adjusted post test means of speed, leg explosive power, agility, anaerobic power, resting pulse rate and cardio-respiratory endurance were 30.31, 10.36, 98.03, 8.25, 271.95 and 139.36 respectively. The table 'F'-ratio was 3.95. Hence there was significant difference on the above said variables at 0.01 level of confidence for the degrees of freedom 3 and 116.

The obtained 'F' ratio (Table III and IV) of adjusted post test means of low duration aerobic dancing in speed, leg explosive power, agility, anaerobic power, resting pulse rate and cardio-respiratory endurance were 243.54, 6.63, 112.09, 34.94, 109.12 and 34.0 respectively. The table 'F'-ratio was 3.95. Hence there was significant difference on the above said variables at the 0.01 level of confidence for the degrees of freedom 3 and 116.

The obtained 'F' ratio (table V and VI) of adjusted post test means of medium duration aerobic dancing in speed, leg explosive power, agility, anaerobic power, resting pulse rate and cardio-respiratory endurance were 72.19, 175.63, 69.63, 29.41, 259.35 and 250.81 respectively. The table F-ratio was 3.95. Hence there was significant difference on the above said variables at the 0.01 level of confidence for the degrees of freedom 3 and 116.

The obtained 'F' ratio (table VII and VIII) of adjusted post test means of high duration aerobic dancing in speed, leg explosive power, agility, anaerobic power, resting pulse rate and cardio-respiratory endurance were 0.10, 0.192, 15.60, 4.83, 540.91 and 193.21 respectively. The table 'F'-ratio was 3.95. Hence there was significant difference on the above said variables at the 0.01 level of confidence for the degrees of freedom 3 and 116

Conclusions

Within the limitations of the present study, the following conclusions were drawn.

1. Speed, agility, leg explosive power, anaerobic power, resting pulse rate, and cardio-respiratory endurance were influenced due to the effects of low, medium and high duration aerobic dancing.
2. Speed, agility and anaerobic power improved due to low duration aerobic dancing than medium duration aerobic dancing.
3. Agility and anaerobic power decreased due to high duration aerobic dancing.
4. Leg explosive power improved by medium duration aerobic dancing than low duration aerobic dancing..
5. Resting pulse rate considerably reduced and the cardio-respiratory endurance improved due to high duration aerobic dancing than low duration aerobic dancing.
6. Resting pulse rate was decreased and the cardio-respiratory endurance improved due to medium duration aerobic dancing than low duration aerobic dancing.
7. The speed, leg explosive power, agility, anaerobic power, resting pulse rate and cardio-respiratory endurance were improved by twelve weeks of low duration aerobic dancing.
8. Speed, leg explosive power, agility, anaerobic power, resting pulse rate and cardio-respiratory endurance improved by twelve weeks of aerobic dancing.
9. Resting pulse rate and cardio-respiratory endurance improved by twelve weeks of high duration aerobic dancing.

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