ISOLATED AND COMBINED EFFECT OF AQUATIC ACTIVITIES AND YOGIC PRACTICES ON SELECTED PHYSIOLOGICAL VARIABLES AMONG PHYSICALLY CHALLANGED CHILDREN

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INTRODUCTION

There are tremendous changes in physical education and sports science and assumption about now physically challenged children are to be physically educated now changing day by day. When the education for all physically challenged children's act of 1975 was enacted physical education was the only educational curriculum specifically named. This singular identification has placed unique opportunities and responsibilities on physical education profession to serve physically challenged population.

Aquatic activities provide a mean for training and conditioning individuals of all ages, and all particularly well suited for developmental and physically challenged children. It should be pointed out that if a specific aquatic activity is not actually planned and conducted often very little physical activity takes place. Aquatic activities such as water skiing, scuba diving, and boating avenues are for increasing independence and normalization. Today, aquatic activities are used as part of sports medicine and physical therapy programmed and often in rehabilitation of sports injuries. Recent development in rehabilitation and sports medicine include deep water running and adaptive activities. Aquatic activities, as a therapeutic medium, are also used by people with physical, mental, emotional disabilities.

Physically and mental therapy is one of yoga's most important achievement. What make it so powerful effective are the facts that are works on the holistic principles of harmony and unification. Yoga has succeeded as an alternative form of therapy in disease as asthma, diabetes, blood pressure, and constitutional nature where modern science has not. Yoga provides a means for people to find their own way of connecting with their true selves. Through this connection with their real selves it is possible for people to manifest harmony in the current age and for compassion to emerge where hitherto there has been none.

MEANS AND METHODOLOGY

To facilitate this study and reached up to the valid conclusion 80 (Eighty) students studying at Amar Jyoti school and rehabilitation center, Gwalior, were taken randomly as subjects of the study their age ranged between 10 to 15 years and divided into four equal groups namely control group, aquatic training group, yogic practice group, and combined training group. The pre-test and post-test were taken before and after the completion of six weeks of training in aquatic activities, yogic practice and combined training. The significance difference between the experimental groups I, II, III and control group the pre-test and post-test were determined through analysis of covariance (ANCOVA).The adjusted post-test means were computed by ANCOVA and the significant analysis were compare by applying post-hoc test. The level of significance of the study was set at 0.05%.

TABLE – I

Analysis of Covariance of the Means of Three Experimental Groups and the Control Group in Resting Heart Rate

Mean	Control Group	Exp. I	Exp. II	Exp. III	SV	df	SS	MS	Obt. F
Pre-Test	84.15	84.45	84.3	84.7	B/W	3	3.3	1.1	2.60
					W/N	76	217.9	2.86	
Post-Test	84.4	77.15	77.6	76.3	B/W	3	835.13	278.38	95.15
					W/N	76	222.35	2.92	
Adjusted Post Mean	84.41	77.14	77.60	77.29	B/W	3	831.14	277.04	93.66
					W/N	75	221.82	2.95	

*Significant, table F ratio at 0.05 level of significance for 3, 76(df) =2.72, 2and 75(df) =2.73, SV=source of variance, SS=sum of square, MS=means of square.

TABLE - II

Scheffe Post Hoc Comparison of Experimental Groups and Control Group in Resting Heart Rate

Control Group	Exp. I	Exp. I	Exp. I	Mean Difference	C.I.
84.41	77.15			7.26	
84.41		77.60		6.80	
84.41			76.28	8.12	1.55
	77.15	77.60		-0.45	
	77.15		76.28	0.86	
		77.60	76.28	1.32	

Results of Resting Heart Rate

Table shows that the pre-test means of control, aquatic training, yogic practice and combination training were 84.15, 84.45, 84.3 and 84.7 respectively. The F ratio value was 2.72. When compare to table F value and the obtained F value of 2.60 was lower and not significant at 0.05 level of significance.

Table shows that the post-test means of control, aquatic training, yogic practice and combination training were 84.4, 77.15, 77.6 and 76.3 respectively. The F ratio value was 2.72. When compare to table F value and the obtained F value of 95.15 was higher and significant at 0.05 level of significance.

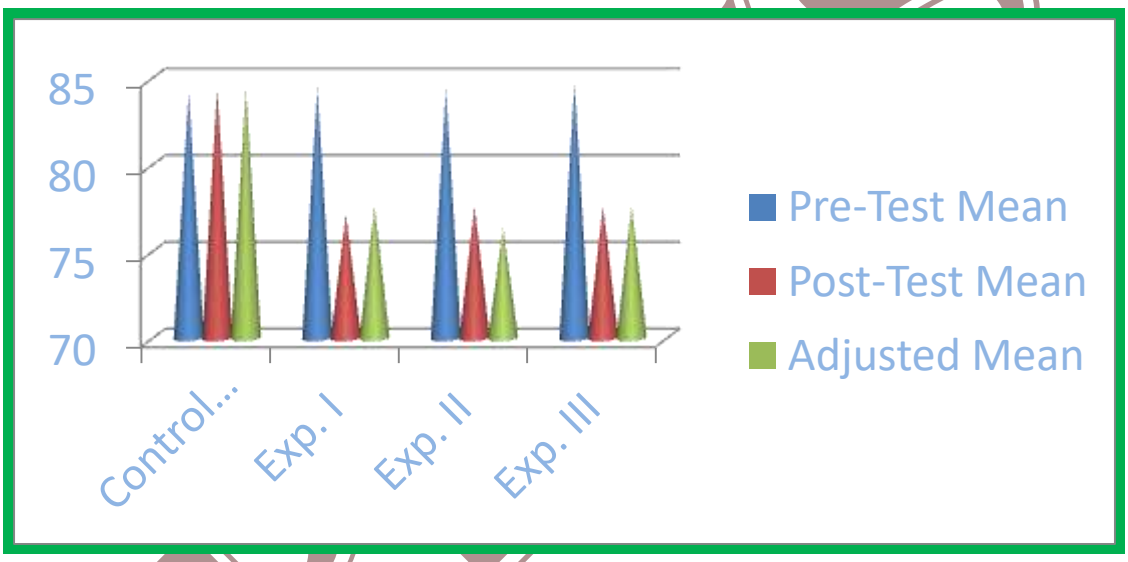
Table shows that the adjusted post-test means of control, aquatic training, yogic practice and combination training were 84.41, 77.14, 77.60 and 77.29 respectively. The F ratio value was 2.73. When compare to table F value and the obtained F value of 93.66 was higher and significant at 0.05 level of significance.

Table shows that the adjusted post-test means of control, aquatic training, yogic practice and combination training were 84.41, 77.14, 77.60 and 77.29 respectively.

The mean difference between control and aquatic training, control and yogic practice, control and combined training, aquatic and yogic practice, aquatic and combination and yogic practice and combined training were 7.26, 6.80, 8.12, 0.46, 0.86, and 1.31 respectively. The scheffe,s Post hoc test confidence interval value was 2.23. Hence there was significant difference between control and aquatic training groups and control and yogic training group and control and combined training group. Other groups do not have any significant difference.

Figure – I

Cone Graph of Ordered Adjusted Mean of Resting Heart Rate



Discussion on Findings

Findings of the study show that there was a significant improvement in resting heart rate of physically challenged children. It may be due to influence of aquatic training, yogic practices and combined training.

TABLE – III

Analysis of Covariance of the Means of Three Experimental Groups and the Control Group in Vital Capacity

Mean	Control Group	Exp. I	Exp. II	Exp. III	SV	df	SS	MS	Obt. F
Pre-Test	2.01	2.009	2.004	2.01	B/W	3	0.0008	0.0003	301.04*
					W/N	76	6.64	0.09	
Post-Test	2.02	2.325	2.46	2.30	B/W	3	2.05	0.69	13.03*
					W/N	76	3.99	0.05	
Adjusted Post Mean	2.02	2.325	2.46	2.30	B/W	3	2.05	0.69	12.88*
					W/N	75	3.99	0.05	

*Significant, table F ratio at 0.05 level of significance for 3, 76(df) =2.72, 2and 75(df) =2.73, SV=source of variance, SS=sum of square, MS=means of square.

TABLE - IV

Shefess,s Post Hoc Comparison of Three Experimental Groups and Control Group in Vital Capacity

Control Group	Exp. I	Exp. I	Exp. I	Mean Difference	C.I.
2.02	**2.32**			**-0.31**	**0.21**
2.02		**2.45**		**-0.44**	
2.02			**2.30**	**-0.29**	
	2.32	**2.45**		**-0.13**	

	2.32		**2.30**	**0.02**	
		2.45	**2.30**	**0.15**	

Results of Vital Capacity

Table shows that the pre-test means of control, aquatic training, yogic practice and combination training were 2.01, 2.009, 2.004 and 2.01respectively. The F ratio value was 2.72. When compare to table F value and the obtained F value of 301.04 was higher and significant at 0.05 level of significance.

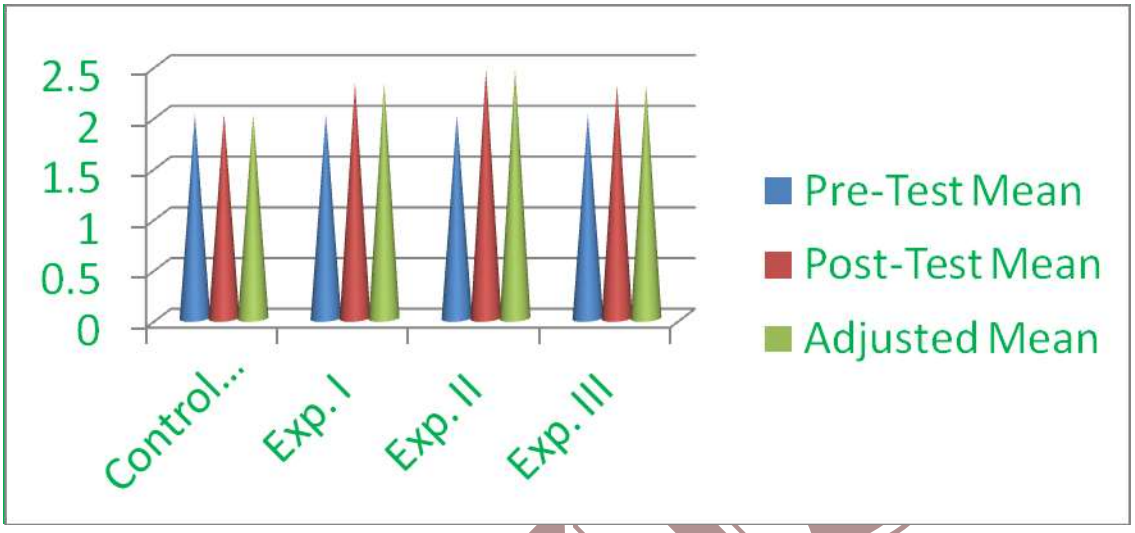
Table shows that the post-test means of control, aquatic training, yogic practice and combination training were 2.02, 2.325, 2.46, and 2.30 respectively. The F ratio value was 2.72. When compare to table F value and the obtained F value of 13.03 was higher and significant at 0.05 level of significance.

Table shows that the adjusted post-test means of control, aquatic training, yogic practice and combination training were 2.02, 2.33, 2.46, and 2.30 respectively. The F ratio value was 2.73. When compare to table F value and the obtained F value of 12.88 was higher and significant at 0.05 level of significance.

Table shows that the adjusted post-test means of control, aquatic training, yogic practice and combination training were 2.02, 2.33, 2.46, and 2.30 respectively. The mean difference between control and aquatic training, control and yogic practice, control and combined training, aquatic and yogic practice, aquatic and combination and yogic practice and combined training were 0.30, 0.43, 0.28, 0.13, 0.02, and 0.15 respectively. The scheffe,s Post hoc test confidence interval value was 0.21. Hence there was significant difference between control and aquatic training groups and control and yogic training group and control and combined training group. Other groups do not have any significant difference.

Figure – II

Cone Graph of Ordered Adjusted Mean of Vital Capacity



Discussion on Findings

Findings of the study show that there was a significant improvement in vital capacity of physically challenged children. It may be due to influence of aquatic training, yogic practices and combined training.

CONCLUSION

1. Resting Heart Rate was significantly decrease due to six weeks of aquatic activities and yogic practice and combined training among physically challenged children.
2. Vital capacity was increase due to six weeks of aquatic activities and yogic practice and combined training among physically challenged children.

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