



Effect of Inclusive Games and Physical Exercises on Selected Physiological Variables among the Intellectually Challenged Children

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Abstract

The purpose of the study was to find out the effect of inclusive games and physical exercises on selected physiological variables among the intellectually challenged children. To achieve the purpose of the present study, forty five intellectually challenged mild level male children were selected on the basis of their mental intelligent quotient (IQ) scores range from 55 to 69 from Vidivelli St.Anne's Rehabilitation Centre for the Mentally Handicapped Children, Tiruchirappalli, TamilNadu, India. The age of the subjects ranged between 7 and 15 years. The subjects (N=45) were randomly assigned to three equal groups of fifteen subjects each. The groups were assigned as Experimental Group I, Experimental Group II and Control Group in an equivalent manner. Experimental Group I was exposed to inclusive games, Experimental Group II was exposed to physical exercises and control group was not exposed to any experimental training other than their regular daily activities. The duration of experimental period was twelve weeks. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, scheffe's post hoc test was used. In all cases 0.05 level of confidence was fixed to test hypotheses. The result reveals that there was a significant improvement in the experimental groups on selected physiological variables when compared to the control group. The physical exercises group has showed better performance on resting pulse rate and respiratory rate than the other two groups.

Key Words: Inclusive Games, Physical Exercises, Resting Pulse Rate, Respiratory Rate, Intellectually Challenged Children.



Introduction

"If you're an underdog, mentally disabled, physically disabled, if you don't fit in, if you're not as pretty as the others, you can still be a hero."

-- **Steve Guttenberg**

Any inclusive games or adapted physical activities must have the repetitive qualities without complex. These types of activities definitely help the disabled students to participate in the sports as well as promoting their health and mind. The participation of the disabled persons in physical activity is purely based upon the facilitation of infrastructure and user friendly fun structured games and activities. The fun games or activities spontaneously induce the mind of the participants to participate these types of activities without insisting. Safe play ground facilitation is also an important factor to participate without any injury. **Kasser (1995)** pointed out the values of the games (i.e.) our remembrance at the earlier stage how exciting it was to chase a ball, roll down a hill, or run after a playmate in the schoolyard? With these vivid images in the mind, it may be agreed that movement offers much more to the life of a child. Physical activity and the experience of developing one's body and skills offer desirable outcomes physically, psychologically, socially, and emotionally for all those who participate.

Playing is an important aspect of modification and direction activities of the mentally retarded child because play is rich in psychological and social values like control and management, self-acceptance, confidence and emotional aspects of success and social acceptance. This is what is sought in most provided programs for those children (**Al-Kooly & Rateb, 1998**). Resting pulse rate is a measure of cardiovascular health, indicating relative stress placed on the cardiopulmonary system (**Armstrong, 1998**). Physiological variables may be defined as those variables which are directly

linked with the various physiological systems and which may be voluntary or involuntary, such as pulse rate, blood pressure etc., (Amita Dhaka, 1986).

Methodology

The purpose of the study was to find out the effect of inclusive games and physical exercises on selected physiological variables among the intellectually challenged children. To achieve the purpose of the present study, forty five intellectually challenged mild level male children were selected on the basis of their mental intelligent quotient (IQ) scores range from 55 to 69 from Vidivelli St.Anne's Rehabilitation Centre for the Mentally Handicapped Children, Tiruchirappalli, TamilNadu, India. The age of the subjects ranged between 7 and 15 years. The subjects (N=45) were randomly assigned to three equal groups of fifteen subjects each. The groups were assigned as Experimental Group I, Experimental Group II and Control Group in an equivalent manner. Experimental Group I was exposed to inclusive games, Experimental Group II was exposed to physical exercises and control group was not exposed to any experimental training other than their regular daily activities. The duration of experimental period was twelve weeks. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, scheffe's post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses. The investigator selected the following variables for the present investigation.

Table - I

S.No.	Variables	Test Items	Units
1	Resting pulse rate	Radial pulse	In Beats/Minute
2	Respiratory rate	Breathing	In Numbers

Results and Discussion

The detailed procedure of analysis of data and interpretation were given below,

Table-II
Summary of Descriptive Statistics on Selected Physiological Variables among the Intellectually Challenged Children

Sl.No	Groups	Resting Pulse Rate				Respiratory Rate			
		Pre	SD (±)	Post	SD (±)	Pre	SD (±)	Post	SD (±)
1	Inclusive Games	74.20	2.04	72.93	1.48	17.26	1.66	16.00	1.60
2	Physical Exercises	74.33	3.15	71.93	1.43	17.46	1.64	15.93	1.86
3	Control Group	75.53	3.18	75.20	2.70	17.86	1.18	17.80	1.14

The table II shows that the pre and post test means and standard deviation of three groups on selected Physiological Variables among the Intellectually Challenged Children.

Table - III
Analysis of Co-variance on Selected Physiological Variables among the Intellectually Challenged Children

Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Squares	F-Value
Pre Test						
1	Resting Pulse Rate	BG	16.17	2	8.08	1.00
		WG	339.46	42	8.08	
2	Respiratory Rate	BG	2.80	2	1.40	0.61
		WG	96.40	42	2.29	
Post Test						
1	Resting Pulse Rate	BG	84.04	2	42.02	10.87*
		WG	162.26	42	3.86	
2	Respiratory Rate	BG	33.64	2	16.82	6.83*
		WG	103.33	42	2.46	
Adjusted Post Test						
1	Resting Pulse Rate	BG	74.44	2	37.22	9.60*
		WG	158.87	41	3.87	
2	Respiratory Rate	BG	28.92	2	14.46	6.03*
		WG	98.28	41	2.39	

* $P < 0.05$ Table F, df (2,42) (0.05) = 3.21

In table III, the results of analysis of variance of pre test scores on resting pulse rate (1.00) and respiratory rate (0.61) were lesser than the table value of 3.21 indicating that it was not significant for the degrees of freedom (2,42) at 0.05 level of confidence

indicating that the random sampling was successful. The results of analysis of variance of post test scores on resting pulse (10.87) and respiratory rate (6.83) were greater than the table value of 3.21 indicating that it was not significant for the degrees of freedom (2,42) at 0.05 level of confidence. The results of analysis of covariance of adjusted post test scores on resting pulse (9.60) and respiratory rate (6.03) were greater than the table value of 3.22 indicating that it was not significant for the degrees of freedom (2,41) at 0.05 level of confidence.

Table-IV

Scheffe's Post-Hoc Test for the selected Physiological Variables among the Intellectually Challenged Children

Sl. No	Variables	Means			Mean Difference	CI
		IGG	PEG	CG		
1	Resting Pulse Rate	72.98	71.96	---	1.02	1.82
		72.98	---	75.11	2.13*	
		---	71.96	75.11	3.15*	
2	Respiratory Rate	16.06	15.94	---	0.12	1.43
		16.06	---	17.72	1.66*	
		---	15.94	17.72	1.78*	

From the table IV it can be seen that the mean differences between inclusive games group and control group, physical exercises group with control group of resting pulse rate (2.13, 3.15) and respiratory rate (1.66, 1.78) respectively, greater than the confidential interval value 3.03 and 0.70 respectively, which was significant at 0.05 level of confidence. The mean differences between inclusive games group and physical exercises group of resting pulse rate (0.49) and respiratory rate (0.26) respectively, were lesser than the confidential interval value 1.82 and 1.43 which was insignificant at 0.05 level of confidence.

Figure-I Shows the Mean Values of Experimental and Control Group on Resting Pulse Rate among the Intellectually Challenged Children

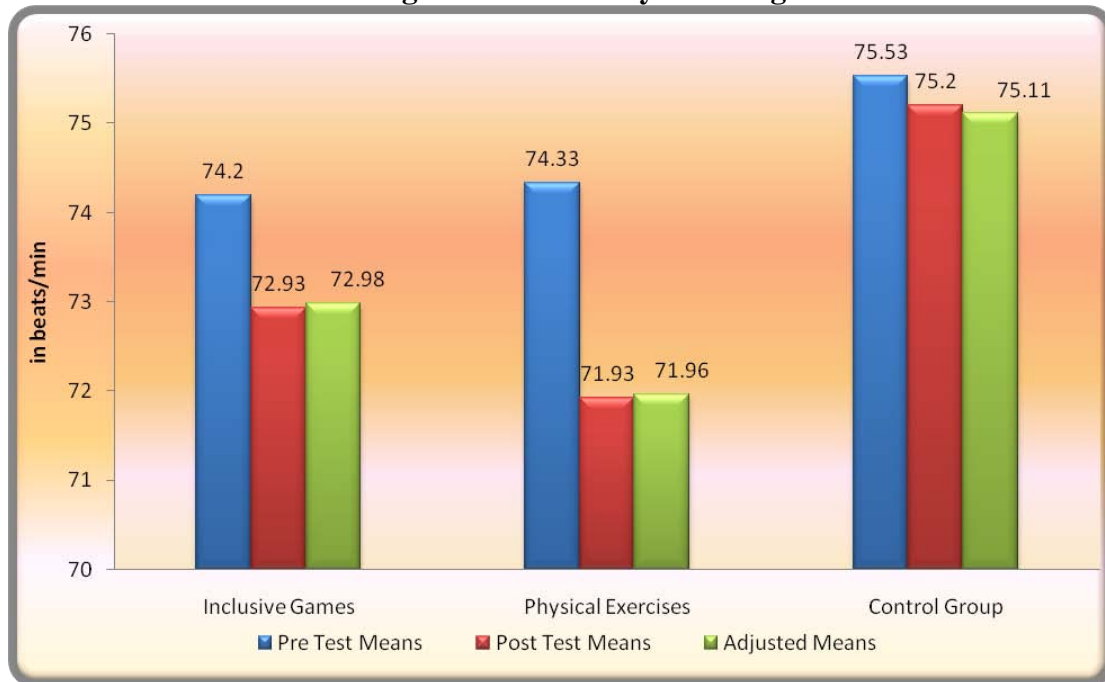
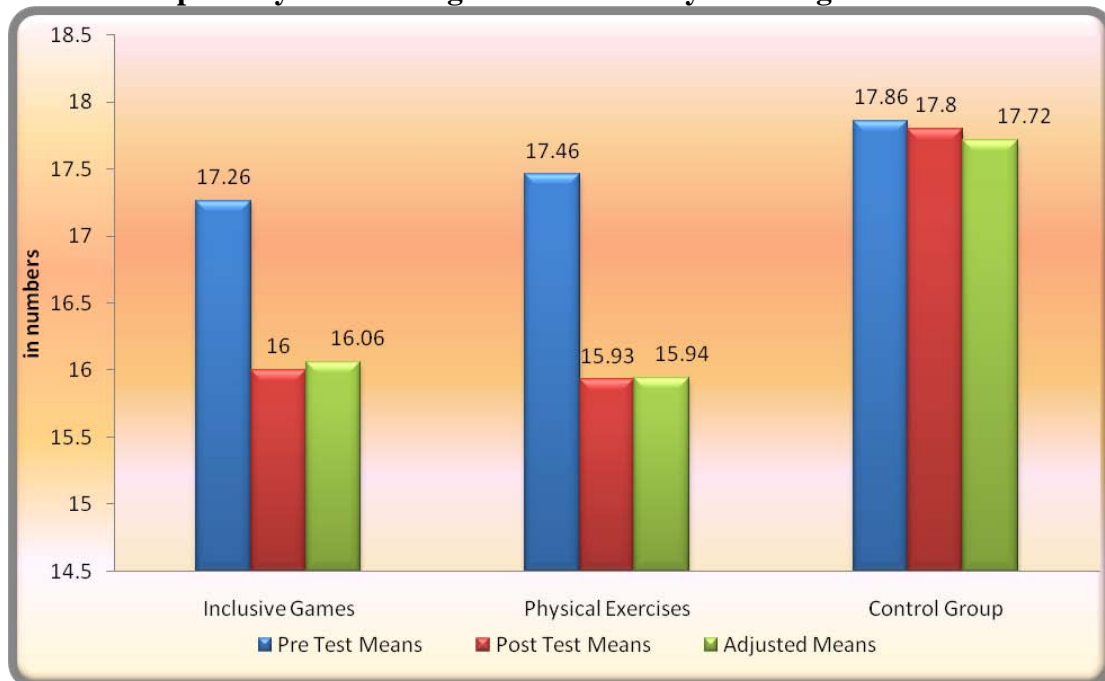


Figure-II Shows the Mean Values of Experimental and Control Group on Respiratory Rate among the Intellectually Challenged Children



CONCLUSIONS

In the light of the study undertaken with certain limitations imposed by the experimental conditions, the following conclusions were drawn.

1. The result of the study reveals that there was a significant improvement in the experimental groups on selected physiological variables when compared to the control group after the completion of twelve weeks of inclusive games and physical exercises.
2. The physical exercises group has showed better performance on resting pulse rate and respiratory rate than the other two groups.

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