



ISSN: 2456-4419

Impact Factor: (RJIF): 5.18

Yoga 2019; 4(1): 943-946

© 2019 Yoga

www.theyogicjournal.com

Received: 29-11-2018

Accepted: 31-12-2018

**LN Sarkar**

Professor and HOD Health  
Education, Lakshmibai National  
Institute of Physical Education,  
Gwalior, Madhya Pradesh, India

**Gajraj Singh**

Ph.D. Scholar, Lakshmibai  
National Institute of Physical  
Education, Gwalior, Madhya  
Pradesh, India

## Investigation of effectiveness of physical activity on motor coordinative abilities of deaf and dumb children

**LN Sarkar and Gajraj Singh**

### Abstract

The objective of the study was to find out the effect of exercise on coordinative abilities of deaf and dumb children's. For the purpose of study 40 boys (treatment group) from school for special children's, Gwalior having age group of 11 to 14 years were randomly selected. The subjects have approximately a similar kind of lifestyle off the ground also in the terms of diet, sleeping time and hours, daily curriculum related activities, as they resided in campus hostels and shared common mess. All the subjects were informed about the objective of the study. It was hypothesized that there will be significant difference in mean scores at different time points at regular intervals of two weeks at which data was collected from the participants. The specific coordinative abilities were measured with appropriate test, rhythmic Ability- Sprint at given Rhythm Ability Test. Explosive Strength- Sargent jump test and Agility- Shuttle run test To maintain the validity and reliability, valid and reliable test items were used. Pre -Data for the study was collected and after that the data was collected at different duration as per training of 0 week 2 week, 4 week, 6 and 8 weeks repeatedly. To find out the effect of training program. Repeated measure ANOVA was used as statistical technique to find out the significant difference. To test the hypothesis, the level of significance was set at 0.05. It was concluded that a significant difference was found in the different levels of time durations in the Orientation ability, reaction ability, and Static balance, whereas No significant difference was found in the reaction ability.

**Keywords:** Rhythmic ability, explosive strength, agility, sprint at given run test, Sargent jump, shuttle run test

### Introduction

Human being is a combination of the body and mind. Both components through their combinations make him more successful. (Essays, 2018). Physical fitness is commonly defined as the ability to take out daily tasks, without undue fatigue, with sufficient energy to enjoy leisure-time pursuits and to meet unforeseen emergencies (A.C.S.M) Physical fitness is the basic requirement of every individual for the purpose to compete dally task. Most of the tasks that a person must perform in their daily lives. The word physical refers to the body, and indicates bodily characteristics i.e. height, weight, constituents of fitness-strength, speed, endurance, flexibility, health coordinative and performance. (M.L. Kamlesh 1988). Motor development is primarily concerned with making human movements. The term motor is derived from the relationship of a nerve or nerve fiber to the one that connects the Central Nervous System with muscles through their convections the movement's results. Effective motor movement can only results if there is harmonious working of the muscular and the nervous system. A comprehensive list of components of motor ability for performance of various physical activities (including sports) include muscular strength, muscular endurance, muscular power, cardiovascular endurance (alternatively also known as cardiopulmonary endurance), agility, speed, balance, flexibility, reaction time, coordinative (eye-foot coordinative, eye-hand coordinative, whole-body coordinative). Basically have Seven Coordinative motor abilities. In this coordinative motor ability were assessed on the basis of 14 indices. It was finished with the utilization of games engine tests explained by different (Mynarski, 2000, Raczek *et al.*, 2002).

**Correspondence**

**LN Sarkar**

Professor and HOD Health  
Education, Lakshmibai National  
Institute of Physical Education,  
Gwalior, Madhya Pradesh, India

**There are seven co-coordinative abilities identified these are: What we selected only three coordination ability**

1) Rhythmic Ability, (2) explosive strength Ability. (3) Agility

In most part of the expressions "impeded" and incapacitated are utilized conversely. The basic speech, 'handicap' signifies something that weakens or precludes. Notwithstanding, inability actually alludes to some sort of limitation or absence of capacity to perform on movement in the way or inside the affirmed range that is viewed as typical for an individual in the human culture.

Hard of hearing and unable to speak or even simply "imbecilic", when connected to hard of hearing individuals who don't talk is a bygone term that is viewed as hostile. Many Deaf individuals don't utilize a verbally expressed language, consequently they are in fact "quiet". "Dumb" has somewhere around an ancient implying that signifies "quiet". In our country the mainstream population is facilitated in much better way as compared to special population .although mainstream population stile faces the dearth of basic playing facilities of in some of areas.

There is a requirement of skilled personal in the area for the training and development of common masses. The expertise and skilled hands of utmost importance patterns of there shall be sufficient knowledge with the exercise expert.

It is also taken in consideration that a specific particular kind of disability may require to be treated in much different ways. There are number of modalities developed in modern world which have been developed to deal with and training the impact of disability and at the same time maximizes the learning process.

Physical exercise may be one of the methods to deal with such disabilities usability the deaf and dumb.

Boys face the problems of lack of coordinative, lack of nervous control.

Exercise quality movement of spine and it may improve in the function of the nerve.

The fluid in the ear with is responsible for mentioning balance, also gets moved and there are chances of developing efficient neuromuscular system.

The study was under think to analyses the effects of well-designed exercise program in the development of physical and coordinative aspects of deaf and dumb children.

**Methodology**

For the purpose of study 40 boys (treatment group) from school for special children’s, Gwalior having age group of 11 to 14 years were randomly selected. In order to select a specific motor abilities tests, first of all a list of selective test items were finalized, keeping in mind the relevance of measuring the motor abilities of school level student of physical education .a systematized list of 7 test items were chalked out by the researcher with help of reviews literature and experts in the field. The specific motor coordinative abilities rhythmic Ability. - Sprint at given Rhythm Ability Test. Explosive Strength-Sargent jump test and Agility-Shuttle run test It was kept in mind to prepare valid and reliable test items.

The data on selected test items were collected from government school for special children’s Gwalior but before the testing program was organized, the researcher assembled all the subjects together to brief them about the nature .modalities and objectives of the present investigation and demonstrate them various test so that they could have the mental picture of the various tests in which they are going to

perform. Pri data for the study was collected and after that the data was collected at different duration as per training 0 weeks, 2 weeks, 4weeks, 6 weeks, 8 weeks, repeatedly. To find out the effect of training program on the special children’s.

**Statstcal technique**

To compare the effects of various training duration of exercise on coordinative abilities, one way repeated measure ANOVA test was used as statistical technique. To describe the characteristics of the data, simple descriptive statistics was used. SPSS version 20 was used to apply the statistical technique and the level of significance was set at 0.05.

**Result**

**Table 1:** Descriptive statistics of scores of rhythmic ability at selected time points

Exp. Treatments	Mean	Std. Deviation	N
Test 1(Zero week)	2.22	.30	38
Test 2(Two week)	2.20	.27	38
Test 3(Four week)	2.19	.37	38
Test 4(six week)	2.11	.27	38
Test 5(Eight week)	2.05	.23	38

Table above reveals the descriptive statistics for Rhythmic Ability of all the experimental treatments of four levels of time duration.

The mean and standard deviation of all the experimental treatments of four levels of time duration i.e. Test 1, Test 2, Test 3, Test 4 and Test 5 were 2.22±.30, 2.20±.27, 2.19±.37, 2.11±.27 and 2.05±.23 respectively.

**Table 2:** ANOVA (repeated measure) table for rhythmic ability among different levels of time duration

Source (Sphericity Assumed)	Type III Sum of Squares	Df	Mean Square	F	p-value	Partial Eta Squared
Time	.792	4	.198	3.236	.014	.080
Error (Time)	9.052	148	.061			

\*Significant at 0.05 level

Table above reveals that the obtained p-value .014 is lesser than .05, thus indicating that, significant difference was found among the various levels of time duration.

As the F value 3.236 was found significant, Post-Hoc test was applied and pair-wise mean comparisons of the different levels of time duration were computed and shown in table below:

**Table 3:** Descriptive statistics of scores of explosive strength at selected time points

Exp. Treatments	Mean	Std. Deviation	N
Test 1(Zero week)	8.88	2.72	38
Test 2(Two week)	9.64	2.30	38
Test 3(four week)	11.80	2.73	38
Test 4(six week)	12.11	2.94	38
Test 5(eight week)	12.95	2.96	38

Table above reveals the descriptive statistics for Explosive Strength of all the experimental treatments of four levels of time duration.

The mean and standard deviation of all the experimental treatments of four levels of time duration i.e. Test 1, Test 2, Test 3, Test 4 and Test 5 were 8.88±2.72, 9.64±2.30, 11.80±2.73, 12.11±2.94 and 12.95±2.96 respectively.

**Table 4:** ANOVA (repeated measure) table for explosive strength among different levels of time duration

Source (Greenhouse-Geisser)	Type III Sum of Squares	Df	Mean Square	F	p-value	Partial Eta Squared
Time	455.105	2.996	151.894	18.283	.000	.331
Error (Time)	921.004	110.860	8.308			

\*Significant at 0.05 level

Table above reveals that the obtained p-value .000 is lesser than .05, thus indicating that, the significant difference was found among the various levels of time duration. As the F value 18.283 was found significant, Post-Hoc test was applied and pairwise mean comparisons of the different levels of time duration were computed and shown in table below:

**Table 5:** Post-hoc test for pairwise comparisons of different levels of time durations for explosive strength

Test 1	Test 2	Test 3	Test 4	Test 5	Mean Difference	p-value
8.88	9.64				-.766	.151
8.88		11.80			-2.925*	.000
8.88			12.11		-3.228*	.000
8.88				12.95	-4.070*	.000
	9.64	11.80			-2.159*	.000
	9.64		12.11		-2.463*	.000
	9.64			12.95	-3.304*	.000
		11.80	12.11		-.303	.573
		11.80		12.95	-1.144	.118
			12.11	12.95	-.841	.248

\*Significant at 0.05 level

Table above depicts that the obtained p-value (.151, .573, .118 and .248) of various pairs i.e. Test 1 & Test 2, Test 3 & Test 4, Test 3 & Test 5 and Test 4 & Test 5 were higher than .05, thus indicating that no significant difference was found between them at .05 level of significance.

On the other hand the obtained p-value .000 of all other pair were lesser than .05, thus indicating that the significant difference was found between all other pairs at .05 level of significance.

**Table 6:** Descriptive statistics of scores of agility at selected time points

Exp. Treatments	Mean	Std. Deviation	N
Test 1(Zero week)	16.18	1.00	38
Test 2(Two week)	16.45	.95	38
Test 3(Four week)	16.31	.92	38
Test 4(Six week)	16.06	.76	38
Test 5(Eight week)	15.70	1.18	38

Table above reveals the descriptive statistics for Agility of all the experimental treatments of four levels of time duration. The mean and standard deviation of all the experimental treatments of four levels of time duration i.e. Test 1, Test 2, Test 3, Test 4 and Test 5 were 16.18±1.00, 16.45±.95, 16.31±.92, 16.06±.76 and 15.70±1.18 respectively.

**Table 7:** Test of significance of mean differences between selected time points

Source (Greenhouse-Geisser)	Type III Sum of Squares	Df	Mean Square	F	p-value	Partial Eta Squared
Time	12.619	2.431	5.192	4.304	.011	.104
Error (Time)	108.476	89.932	1.206			

\*Significant at 0.05 level

Table above reveals that the obtained p-value .011 is lesser than .05, thus indicating that, the significant difference was found among the various levels of time duration.

As the F value 4.34 was found significant, Post-Hoc test was applied and pairwise mean comparisons of the different levels of time duration were computed and shown in table below:

On the other hand the obtained p-value of all other pair were higher than .05, thus indicating that the no significant difference was found between all other pairs at .05 level of significance.

**Discussion of Findings**

The rhythmic ability was also not found to be significantly affected due to the administration of the training program. The lack of significant difference may be attributed to the less sample size and short direction of training .the rhythmic ability.

The result of the study revealed that the explosive strength improved in the participants after the training program. The explosive strength improved consistently after 2<sup>nd</sup> week and gained consistent enhancement (Giagazoglou. P. *et al*, 2013). Could be attributed to the development of neuro-proprioceptive Sprint at given Rhythm Ability Test. Explosive Strength-Sargent jump test and Agility- Shuttle run test the mechanism of participants due to the training .the muscular system would have improved due to the better summation of forces within the body .explosive strength requires an efficient A-T-C\_P energy system which could be develop with the help of accurate training.

**Conclusion**

It was concluded that a significant difference was found in the different levels of time durations in the Orientation ability, Static balance, Dynamic Balance and Explosive strength, whereas No significant difference was found in the reaction ability, rhythmic ability and Agility.

**References**

1. Nagender H, Vinod Kumar, Mukherjee S. Evaluation of cognitive behavior among deaf subjects with video game as intervention. Cognitive system research. 2017; 42:42-57.
2. Maity Nabanita, Manda, Bhim Chandra. Creativity and impulsivity among deaf and dumb children: A correlational study, International Journal of Social Science; New Delhi. 2017; 6(1):15-19. DOI:10.5958/2321-5771.2017.00002.3.
3. Emad Abdallaha E, Ebaa Fayyoumi. Assistive Technology for deaf people Based on android Platform. Procedia computer science, 2016, 295-301.
4. Parikshit Gogate, Shashi Bhusan, Shantanu Ray, Amit Shinde. Impact of correcting visual impairment and low vision in deaf -mute student in Pune. Indian J Ophthamol, 2016, 64(12).
5. Emad Abdallaha E, Ebaa Fayyoumi. Assistive Technology for deaf people Based on android Platform. Procedia computer science, 2016, 295-301.
6. Parikshit Gogate, Shashi Bhusan, Shantanu Ray, Amit Shinde. Impact of correcting visual impairment and low vision in deaf -mute student in Pune. Indian J Ophthamol, 2016, 64(12).
7. Dr. Sandip Sankar Ghosha. A comparative study on selected physical fitness components and personality traits between deaf & dump and narmal school boys of best Bengal. International Journal of physical Education

fitness and Sports, 2014, 52-59.

8. Sukumaran C, Dr. Sebastian PJ. Effect of inclusive game and physical Exercise on selected Psychomotor variables among the intellectually challenged children. Star International Journal, 2014, 1-7.