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## Effect of the selected exercises on different motor coordination variables in deaf and dumb Childrens

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### 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, Reaction Ability- Ball Reaction Exercise Test, Orientation Ability- Medicine Ball 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, Static balance, and Static balance, whereas No significant difference was found in the reaction ability, rhythmic ability and.

**Keywords:** Orientation ability, reaction ability, static balance

### 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).

**There are seven co-coordinative abilities identified. These are: what we selected only three coordination ability**

1) Orientation Ability, (2) Reaction Ability. (3) Static balance

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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 still 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 abilities coordinative abilities Orientation Ability. Reaction Ability. Static balance (Static Balance Test), Dynamic balance (Mortify bass 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, 4 weeks, 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.

## Results

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

Exp. Treatments	Mean	Std. Deviation	N
Test 1 (Zero week)	8.08	.92	38
Test 2 (Two week)	7.97	.73	38
Test 3 (Four week)	7.62	.87	38
Test 4 (six week)	7.87	.84	38
Test 5 (Eight week)	7.55	.81	38

Table 1 reveals the descriptive statistics for Orientation 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  $8.08 \pm .92$ ,  $7.97 \pm .73$ ,  $7.62 \pm .87$ ,  $7.87 \pm .84$  and  $7.55 \pm .81$  respectively.

**Table 2:** Anova (repeated measure) table for orientation 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	7.982	4	1.995	3.515	.009	.087
Error (Time)	84.013	148	.568			

\*Significant at 0.05 level

Table 2 reveals that the obtained p-value. 009 is lesser than. 05, thus indicating that, the significant difference was found among the various levels of time duration.

As the F value 3.515 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 3:** Post-hoc test for pairwise comparisons of different levels of time durations for orientation ability

Test 1	Test 2	Test 3	Test 4	Test 5	Mean Difference	p-value
8.08	7.97				.105	.467
8.08		7.62			.463*	.008
8.08			7.87		.205	.212
8.08				7.55	.533*	.010
	7.97	7.62			.358*	.020
	7.97		7.87		.100	.485
	7.97			7.55	.427*	.022
		7.62	7.87		-.258	.126
		7.62		7.55	.070	.748
			7.87	7.55	.328	.109

\*Significant at 0.05 level

Table 3 depicts that the obtained p-value (.008,. 010,. 020 and. 022) of various pairs i.e. Test 1 & Test 3, Test 1 & Test 5, Test 2 & Test 3 and Test 2 & Test 5 were lesser than. 05,

thus indicating that, significant difference was found between them at .05 level of significance.

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

**Table 4:** descriptive statistics of scores reaction ability at selected time points.

Exp. Treatments	Mean	Std. Deviation	N
Test 1 (Zero week)	2.1383	.46538	38
Test 2 (Two week)	2.0807	.41919	38
Test 3 (Four week)	2.0104	.38691	38
Test 4 (six week)	1.9721	.40395	38
Test 5 (eight week)	2.1174	.69622	38

Table 4 reveals the descriptive statistics for Reaction 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 2.13±.46, 2.08±.41, 2.01±.38, 1.97±.40 and 2.11±.69 respectively.

**Table 5:** Anova (repeated measure) table for reaction ability among different levels of time duration

Source (Greenhouse-Geisser)	Type III Sum of Squares	Df	Mean Square	F	p-value	Partial Eta Squared
Time	.759	2.317	.327	1.064	.357	.028
Error (Time)	26.371	85.745	.308			

Table 5 reveals that the obtained p-value. 357 is higher than .05, thus indicating that, no significant difference was found among the various levels of time duration.

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

Exp. Treatments	Mean	Std. Deviation	N
Test 1(Zero week)	5.28	1.47	38
Test 2(Two week)	6.15	1.36	38
Test 3(Four week)	6.38	1.22	38
Test 4(Six week)	7.03	1.27	38
Test 5(Eight week)	7.13	1.38	38

Table 6 reveals the descriptive statistics for Static Balance 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 5.28±1.47, 6.15±1.36, 6.38±1.22, 7.03±1.27 and 7.13±1.38 respectively.

**Table 7:** Anova (repeated measure) table for static balance among different levels of time duration

Source (Greenhouse-Geisser)	Type III Sum of Squares	Df	Mean Square	F	p-value	Partial Eta Squared
Time	85.087	2.986	28.499	15.553	.000	.296
Error (Time)	202.424	110.468	1.832			

\*Significant at 0.05 level

Table 7 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 15.553 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 8:** post-hoc test for pairwise comparisons of different levels of time durations for static balance

Test 1	Test 2	Test 3	Test 4	Test 5	Mean Difference	p-value
5.28	6.15				-.875*	.001
5.28		6.38			-1.102*	.000
5.28			7.03		-1.748*	.000
5.28				7.13	-1.848*	.000
	6.15	6.38			-.226	.391
	6.15		7.03		-.873*	.007
	6.15			7.13	-.973*	.000
		6.38	7.03		-.646*	.015
		6.38		7.13	-.746*	.014
			7.03	7.13	-.100	.743

\*Significant at 0.05 level

Table 8 depicts that the obtained p-value (.391 and .743) of various pairs i.e. Test 2 & Test 3 and Test 4 & Test 5 were higher than .05, thus indicating that no significant difference was found between them.

On the other hand the obtained p-value 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.

### Discussion of Findings

The results of the study revealed that there is significant difference in the orientation ability in the participants during the training protocol. it was revealed that there is a significant difference in the orientation ability in last observation as compared to other observation from baseline (Alesi M *et al.* 2016) [1]. One of the issues faced by the deaf and dumb children in is program in the improvement in orientation program may be attributed to the particular movement patterns designed in accordance with group games, Ball games, Passing, catching and touching etc. These movements helped the participants to move in various directions and get challenges in oriented in relation to other stationery or moving objects. The orientation ability of the participants got improved in the 3<sup>rd</sup> time point and 4<sup>th</sup> time point i.e between 6<sup>th</sup> week and 8<sup>th</sup> week. It may be concluded that the orientation ability may take longer duration of training as it is evident by result. Orientation ability also may require longer duration due to the reason that. the neuro muscular system and reception of signal may require to be in fine tuning at lower levels in body. Further of the orientation ability continues to improve or not.

The reaction ability was not found to be significantly affected due to the training program (Alesi M *et al.*, 2016, Kharki S *et al.*, 2015) [1, 2]. The lack of significant difference may be attributed to the less sample size. The lack of training program duration may also be a reason for the insignificant difference in the training program the reaction ability drills were program with limitation i.e. there were many reaction drills based on acoustic signals only few drills using flag etc were used. The reaction ability although showed constant improvement among the participants due to physical training, But the change in performance was not found to statistically significant.

Static balance performance was found to be significantly improved due to training. Results revealed that the static balance performance of the participants improved with the time (Singh S 2014, Ghosha S 2014) [9]. The significant improvement in the static ability of the participants may be

attributed to the exercise prepared for training to core strength, legs and total body strength in the participants the development of strength in the postural muscles of body due to isometric and isotonic exercise. The strength development in the legs and torso leads to only development of coordination of different muscles due to the exercise could have helped in the development of static ability. The static balance was a factor found that to be significantly different from 1<sup>st</sup> to 2<sup>nd</sup>, 2<sup>nd</sup> to 3<sup>rd</sup> and 3<sup>rd</sup> and 1<sup>st</sup> time points the might be concluded that the static balance performance increases among the participants since the beginning of the training program it kept on improving across the training program although it was not found to statistically significant between 3<sup>rd</sup> and 4<sup>th</sup> time point. It is evident that deaf and dumb children improve significantly themselves is training of their static ability test item.

### 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.

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