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Investigation on the impact of physical training programme on accuracy of disabled school children

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Abstract
The aims of the present study was to evaluate the effect of selected physical training program on the accuracy of intellectually disabled school girls. Forty two (42) subjects were selected for the present study from selected schools of coastal area in Karnataka and Bengaluru district of Karnataka. Among those twenty one (21) was categorized as Control Group and rest twenty one (21) as Experimental Group. The age of the subjects ranged from 11-14 years. The random group design was considered and the training was given for a period of twelve weeks on four days in a week. The training session was carried out for one hour which included warming up, physical exercises and cooling down. The measured criterion was only Accuracy. Pre and post data were collected before and after twelve weeks training. The data of the selected variable was analyzed through statistical procedure by using ANCOVA test. The result of the present study showed that the significant differences existed in accuracy in case of the Experimental Group of intellectually disabled school girls but for the control group no significant changes occurred. It may be concluded that the training has some positive beneficial effect on accuracy of the intellectually disabled school girls.

Keywords: Physical training, accuracy, intellectually disabled, school girls, ANCOVA test

Introduction
Intellectual disability is identified by problems in both intellectual and adaptive functioning. Intellectual functioning is measured with individually administered and psychometrically valid, comprehensive, culturally appropriate, psychometrically sound tests of intelligence. While a specific full-scale IQ test score is no longer required for diagnosis, standardized testing is used as part of diagnosing the condition. A full-scale IQ score of around 70 to 75 indicates a significant limitation in intellectual functioning.2 However, the IQ score must be interpreted in the context of the person's difficulties in general mental abilities. Moreover, scores on subtests can vary considerably so that the full-scale IQ score may not accurately reflect overall intellectual functioning. Therefore, clinical judgment is needed in interpreting the results of IQ tests.

In the today's modern era mental retardation has been globally re-termed as intellectual disability (ID). In general, intellectually disabled children reach developmental milestones such as walking and talking much later than the general population. Symptoms of mental retardation may appear at birth or later in childhood. Time of onset depends on the suspected cause of the disability. In some cases of mild mental retardation problems are not diagnosed before the child enters in to the preschool stage. These children typically have difficulties with social belongingness, communication, and functional academic skills. Children who have a neurological disorder or illness such as encephalitis or meningitis may suddenly show signs of cognitive impairment and adaptive difficulties.

Psychomotor variables act as the medium for the realization of cognitive and effective domains of learning and motor behavior. These domains of learning are inseparable identities and work in perfect in harmony and vision with one another. The psychomotor variables are primarily concerned with muscular contraction and performance of motor skills. Psychomotor performance includes impulses, motivations, wishes, drives, and instincts and cravings as expressed by a person's behavior or motor activity.

Accuracy is the ability of the vision system to coordinate the information received through the eyes to control, guide, and direct the hands, in the accomplishment of a given task, such as

handwriting or catching a ball. Accuracy uses the eyes to direct attention and the hands to execute task. Vision in the process of understanding what is seen by the eyes. It involves more than simple visual acuity (ability to distinguish fine details). Vision also involves flexion and eye movement abilities accommodation (Focusing), convergence, binocularity (Eye teaming) and the control. For example, when children are learning to draw, they follow the position of the hand holding the pencil visually as they make lines on the paper. Fine motor skills are involved in the control of small muscle movements, such as when an infant starts to use fingers with purpose and in coordination with the eyes.

In the present study accuracy was measured through overhand throw for accuracy. Overhand throw is a complex motor skill that involves the entire body in a series of linked movements starting from the legs, progressing up through the pelvis and trunk, and culminating in a ballistic motion in the arm that propels a projectile forward.

Every intellectual disabled should be given physical training from early childhood (pre-school years) firstly in the form of practical exercises of life, training of senses and then active cooperative which in the long run was lead to the future. They need the opportunity to develop their physical, mental and emotional ability. Of course they need some support of special communication to understand the physical training or exercise, what they have to perform for their development.

Keeping the above factors in mind the present researcher felt a need to undertake a research project with a purpose to find out the effect of physical training programme on accuracy of intellectually disabled school girls.

Objective of the study

The focused objective of this study was to observe the effect of physical training on accuracy of intellectually disabled school girls.

Methods and Materials

Forty two (42) subjects were conveniently selected for the present study from coastal area in Karnataka and Bengaluru district of Karnataka. Twenty one (21) students formed the Control Group and rest twenty one (21) was the members of the Experimental Group and their age ranged from 11-2 14 years. The group was treated with selected physical training program. The training was given for a period of 12 weeks. Training was given on four days in a week (i.e. Monday, Tuesday, Thursday, and Friday).

The training session was carried out for one hour which includes warming up, physical training i.e., exercises and cooling down. Accuracy was measured through over hand throw for accuracy in points. Mean of the variables was calculated. The data of the selected variables were analyzed through Statistical procedure by using ANCOVA test. Statistical significance was tested at 0.05 level of confidence.

Training programme

The training was carried out from the month of March, 2022. The subjects had undergone training 4 days in a week between 11.00 am to 12:00 pm for 12 weeks at the school hall. The researcher clearly explained and nicely demonstrated all the activities to the subjects. The mirror method was used for practicing all the physical training (exercises). The training programs were free hand exercise, brisk walking, jogging, stretching exercise, circle ball passing, shuttle run, clockwise and anti-clockwise running, jumping, toy games and fine motor activities i.e. touch the marking line with hand and leg, hand movement, touch the ball, catching, throwing, gather the block etc. All the participants were tested two days before and immediately after the 12 weeks of experimental period on the selected specific variable.

Results

Table 1: Analysis of Co-Variance of the Means of Accuracy of Experimental and Control Groups

Mean	Over hand throw (point)						
	Experimental Group	Control Group		SS	df	MSS	F Ratio
Pre Test	5.71	3.86	A	36.21	1	36.214	2.33
			W	622.86	40	15.57	
Post Test	11.76	4.14	A	609.52	1	609.52	40.88*
			W	596.38	40	14.91	
Adjusted	11.58	4.32	A	523.63	1	523.63	
Post Test							35.60*
			W	573.65	39	14.71	

*Significant at 0.05 level of confidence

F.05 (1, 40) = 4.08	A = among means variance
F.05 (1, 39) = 4.08	W = within group variance

In Table 1 the mean value and 'F' ratio of Accuracy of the both groups of intellectually disabled school girls in pre and post phase was given. The mean of accuracy of the experimental group in pre-test was 5.71 points, in post-test was 11.76 points & in adjusted post-test was 11.58 points and the mean accuracy of the Control Group in pre-test was 3.86 points, in post-test was 4.14 points & in adjusted post-test was 4.32. The calculated 'F' ratio of the pretest was (2.33) was less than the table value $F_{0.05}$ (1, 40) = 4.08, which indicate that the control and the Experimental Groups were homogeneous and calculated 'F' ratio of the post-test (40.88*) was much greater than the table value $F_{0.05}$ (1,40) = 4.08, which undoubtedly indicate the significant differences between the control and the experimental groups after training. The F ratio of the adjusted posttest was 35.60* which

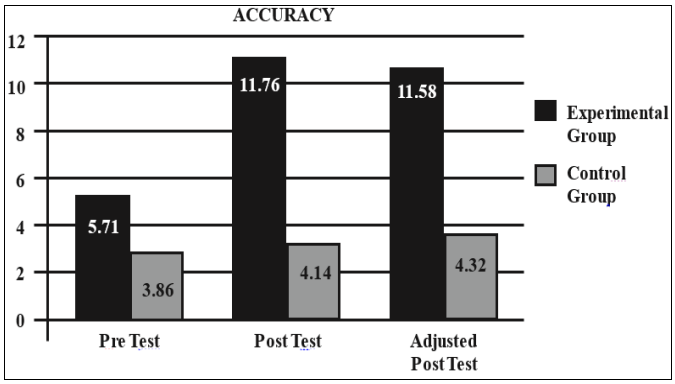

Fig 1: The Graphical Representation of the Mean Value of Accuracy in Pre, Post and Adjusted Post Test Mean Phases of the Intellectually Disabled School Girls of the Experimental and Control Groups

Which indicated the true developmental effect of training upon accuracy on the experimental group unlike the control group. Figure 1 shows the mean values of Accuracy of the subjects of experimental and control group of intellectual disability school girls in different three cases of calculations.

Discussion and Finding

From the above mentioned results the significant difference was found between experimental and Control Group of

intellectually disabled school girls in respect to psychomotor variable of accuracy after training. The study results showed better accuracy in the Experimental Group than the Control Group. Due to the fact that the Control Group was not treated by any type of training except their daily routine work like theory classes, practical class and also physical education classes as per the scheduled curriculum of concerned school. But the students under Experimental Group has gone through some selected, scheduled and progressive physical training programme i.e., free hand exercise, brisk walking, jogging, clockwise and anti-clockwise running, jumping, side ward run, side lunching, half squat, and fine motor activities i.e., touch the marking line with hand and leg, hand movement, touch the ball, catching, throwing, gather the block and recreation game etc. They regularly participated in the training program and enjoyed the training. As the Parents of the trainee were used to present in the training hall, there were possibilities that they practiced their son at the home some training and exercises considering their interests and pleasure. Further, on the basis of the result, we can say that the selected physical training programme has improved the 4 accuracy of the intellectually disabled school girls. This supports the findings of C. Anita Reddy (1993) [8] who reported that the regular participation in physical education programme improves accuracy. R.J. Shau and M.V. Bhole (1984) [10] in their study concluded that yoga training programme develop performances and improves speed and accuracy. J. Samuel Jesudoss (2012) [12] reported that among under 14 age groups there was a significant improvement on psychomotor abilities through exercise. The similar type of research in case of intellectually disabled school girls was not found to the best of the researcher's knowledge but some study was found in other field. Biswajit Sardar (2008) [4] reported that the significant difference was found in comparison of psychomotor ability of football players of different level of achievement.

However, the results of this study cannot be fully supported by research evidence of different other studies because there is very rare research about the effects of selected physical training programme on accuracy of intellectually disabled school girls. Thus, additional research is needed related to the effect of physical training program in a variety of situations on intellectually disabled school girls. It is also necessary to all educational institutions, especially physical education institute & college and special schools to conduct variety training programme for the betterment of the intellectually disabled students.

Conclusions

The planned and scheduled training definitely had some positive influence on Accuracy. Considering the present study it may be concluded that the long term regular well planned physical training programme provides benefit for the improvement of Accuracy of the intellectually disabled school girls.

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