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Impact On Adl Skills Through Functional Fitness Training Programme In Children With Autism Spectrum Disorder

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Abstract

The purpose of the study is to find out whether the physical activity(PA), physical eduction more impactful in ADL activity or the direct ADL activty is more impactful in children with autism spectrum disorder. Study Design: A convenient sampling. Method: Thirty childrens, with a diagnosis of ASD by psychologist. Two groups were divided (Group A) Experimental group and (Group B) Control group. The Experimental group (Group A) received the intervention for 12 weeks of Functional fitness training programmefor 40 mins. And The control group (Group B) received the intervention for 12 weeks, in which they received 20 mins of conventional occupational therapy, and 20 mins of ADL training program in which they were be trained in Basic ADL tasks. The measurement tool used was W-ADL Scale. ThePre-Assessment, Inter-mediate and post Assessment were done. Result: The Experiment group showing a substantial mean difference of 16.47 compared to only 2.40 in the Control group ($p < 0.001$).Experiment group compared to the Control group, demonstrating the effectiveness of the intervention in improving Activity of Daily Living.

Keywords: Autism spectrum disorder,Physical education,Quality physical education,Physical activity,Daily living skill, Quality of life

Introduction:

Autism is a developmental disorder that impairs social interaction and communication skills. Common behavior includes restricted behavior, in which the child does not exhibit original or creative thought, and repetitive/stereotypical behavior, in which the child repeatedly exhibits the same behavior[1] . In order to assess the activity patterns of young people with ASD, it would be preferable to first select an apparatus that, adapted to their specific characteristics, correctly records their PA levels[2] . The amount of PA is contemplate a behavioral factor that effect physical fitness, that is often divided into aerobic fitness (test for cardiorespiratory stamina), musculoskeletal fitness (test for muscular strength, stamina and endurance), pliability (test for range of motion), and body creation (test for the degree of leanness of the body)[3] . Activity of Daily living skill deficits commonly occur in individuals with autism spectrum disorder (ASD). These deficits in juvenile are correlated with poor outcomes, in both vocational and basic independent living skills as adults[4] . Juvenile are

expected to work toward mastering daily living skill (DLS) such as bathing, applying deodorant, using the stove for cook, wash the bathroom, hoover and mopping the ground, using a saving account, purchase items from the store, judge the quality and cost of items, setting an alarm to wake up on time, and setting short-term goals and long-term goals. Both the activities and supposition of DLS change over the direction of growth[5] . DLS like; personal cleanliness, food preparation, time and money management, are important to living life independently and to obtaining employment. Promoting self-care and employment might be decrease the lifelong costs associated with having a child with autism spectrum disorder, as well as contribute to the individual's welfare[6] . Self-care dependence is a remarkable problem among children with autism spectrum disorder, with more than 50% of young children with autism spectrum disorder not able to perform self-care independently[7] .

Hence, Functional fitness programme has emerged as promising intervention for addressing the diverse need of children with ASD this programme not only target physical health but also improve ADL. This study aims to explore the impact of functional fitness training on the activities of ADL skills in children with ASD. therefore, this study seeks to contribute the understanding of effective treatment for children with ASD. The finding of the study promotes overall wellbeing for this population.

Methods and Materials

1. Type of study/Design

A Experimental study and convenient sampling was done in this study.

2. Participants

The study sample was done by using convenient sampling.30 children were taken for the study with the diagnosis of ASD by psychologist. The inclusion criteria to form part of the group of children with ASD (a) children diagnosed with ASD (b)age group 7 to 14 years (c) both sexes male and female (d) children with mild to moderate ASD on the other hand, the exclusion criteria was (a) children with intellectual disability and seizure(b)children with other physical disability (c) children with severe sensory loss,visual or auditory.In inclusion criteria children were taken was mild to moderate ASD and In exclusion criteria those children were not taken who had any pathology and intellectual disability or any severe sensory loss.

3. Procedure

The parents of the children in the sample work contracted and having completed the informed consent form; only one evaluation scale was used to access the children that is a W-ADL scale. the parent father/ mother were administrated during an interview.

4. Outcome Measure

W-ADL Scaleauthor is Maenner MJ et.al they estimated the W-ADL took approximately 5 min for parents to complete.The Waisman Activities of Daily Living Scale (W-ADL) contains 17 activities and each is rated on a 3-point scale (0="does not do at all", 1="does with help", 2="independent"), and a standard set of criteria were used to evaluate its measurement properties.

Across the disability groups, Cronbach's alphas ranged from 0.88 to 0.94, and a single-factor structure was most parsimonious. The W-ADL was reliable over time, with weighted kappas between 0.92 and 0.93.

5. Data Analysis

The data has been collected and entered in MS excel 2010. Different statistical analysis has been performed using Stata MP-17. Normally distributed data has been analyzed using parametric tests and Independent t-test.Experiment group's mean W-ADL score further increases to 29.80, significantly higher than the Control group's score of 16.93 ($p < 0.001$).

6. Results

This table provides a clear overview of how gender is distributed across the different groups, highlighting any potential gender imbalances.Experiment group showing a substantial mean difference of 16.47 compared to only 2.40 in the Control group ($p < 0.001$). These findings suggest that the intervention has a significant positive impact on the W-ADL scores of the Experiment group compared to the Control group, demonstrating the effectiveness of the intervention in improving Activity of Daily Living.

	Group	N	Mean	Std. Deviation	Std. Error Mean	P Value
W-ADL PRE	Experiment	15	13.33	6.956	1.796	0.58
	Control	15	14.53	4.502	1.162	
W-ADL Inter	Experiment	15	21.67	3.200	826	<0.001
	Control	15	15.73	3.900	1.007	
W-ADL Post	Experiment	15	29.80	2.651	.685	<0.001
	Control	15	16.93	3.751	.968	
Diff. W-ADL	Experiment	15	16.47	7.180	1.854	<0.001
	Control	15	2.40	2.063	.533	

Discussion

This study focuses on finding an impact on ADL through functional fitness programme in Children with Autism Spectrum Disorder. Two group were made to determine the impact on ADL skills through functional fitness training programme in Children with Autism Spectrum Disorder, and conventional occupational therapy programme. Controlled group contained 15 children, who were first assessed through W-ADL scale. Controlled group followed by 20 mins of conventional occupational therapy, and 20 mins of ADL training program in which they were be trained in Basic ADL tasks.(each child received this therapy thrice in a week) each child received 36 sessions over 3 months. Experimental group was administered with W-ADL scale followed by functional fitness training programme which included climbing and support in the bar, release to the basketball, Thera-band work out, climbing the steps and walking on the inclined plane, step Box with target, sequenced march. Each child received 36 sessions over 3 month of the time each child received Functional fitness training programme for 40 minutes (each child received this therapy thrice in a week) this study depicts that experimental group show better results. There is significant improvement in their activity of daily living in experimental group.

Conclusion

As concluded in the study thatFunctional Fitness training programme is effective treatment for improving activity of daily living in children with Autism Spectrum disorder. Children with ASD can improve their functional skills and fitness levels byparticipating in functional Fitness training programme. TheseFunctional fitnesstraining programme help to provide activity demands ofeveryday life that are requirefor the coordinated use of multiples joint andmuscles.

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