

Effect of cooperative and competitive play to improve academic performance among ADHD Children

Mrs. P. Punitha¹, Dr. M. Arunkumar², Ms. S. Indhu³

¹Assistant Professor, Saveetha College of Occupational Therapy, Saveetha Institute of Medical and Technical Science (SIMATS), Saveetha Nagar Thandalam, Chennai, Tamil Nadu, India

²Principal of Saveetha College of Occupational Therapy, Saveetha Institute of Medical and Technical Science (SIMATS), Saveetha Nagar Thandalam, Chennai, Tamil Nadu, India

³Final Year Student of Saveetha College of Occupational Therapy, Saveetha Institute of Medical and Technical Science (SIMATS), Saveetha Nagar Thandalam, Chennai, Tamil Nadu, India

ABSTRACT

Attention deficit hyperactivity disorder (ADHD) is a neurodevelopment disorder defined by impairing levels of inattention, disorganization, and hyperactivity-impulsivity. The purpose of this study is to determine the effect of cooperative and competitive play on improving academic performance among ADHD children. The study design was a Quasi-experimental type of study. A total of 30 children in age groups 6-12 were selected with the help of the Vanderbilt teacher rating scale. They were conveniently distributed into 2 groups: the experimental group (15 children) and the control group (15 children). The Control group underwent conventional occupational therapy whereas the experimental group underwent cooperative and competitive play for 36 sessions of 45 minutes. The statistical analysis showed a highly significant improvement in post-test scores of both the control and experimental group. Hence this study concluded that cooperative and competitive play has significant improvement in academic performance among ADHD children.

Keywords: Attention deficit hyperactive disorder (ADHD), Cooperative and Competitive play, Academic performance.

INTRODUCTION

ADHD is a neurodevelopment disorder defined by impairing levels of inattention, disorganization, and hyperactivity-impulsivity. ADHD is more frequently affected in males than females in general populations.

The ADHD child will have difficulties staying on one task, seeming not to listen, and losing temper, at levels that are inconsistent with their age / developmental level. It is also associated with reduced school performance and academic attainment and is socially withdrawn. ADHD is most often identified during elementary school years and inattention will be the significant problem that the child faces during their school work.

The occupational therapist often implements a play-based intervention to engage the child to participate in “just right challenges actively”. The therapist will incorporate playful qualities in their intervention, which are repeated, practiced, and generalized so that the children will exhibit attention, and social interaction and show improvement in their performance area.

Aim of the study

This study aims to find out the effect of cooperative and competitive play on academic performance among ADHD children.

Objective

- To find out children with poor academic performance using an academic performance rating scale.

- To find out the effect of conventional occupational therapy to improve academic performance in the control group.
- To find out the effect of cooperative and competitive play to improve academic performance in the experimental group.
- To compare the post-test scores between the control (conventional occupational therapy) group and the experimental (cooperative and competitive play) group.

Research Hypothesis

There is a significant improvement in academic performance by using cooperative and competitive play.

Research design

Quasi-experimental type with a quantitative method was adopted

Sample technique

Convenient sampling technique was used.

The sample size

30 subjects participated.

- 15 in the experimental group
- 15 in the control group

Sample setting

The research was conducted in Faith special school, Thiruvalluvar, and Saveetha pupileco-school, poonamallee.

Selection Criteria Inclusion criteria

- ADHD children with the age group of 6-12 years,
- Including both male and female children
- Inattention type of ADHD children.
- ADHD child with poor academic performance.

Exclusion criteria

- Children with good/excellent academic performance.
- Severe visual impairment, or any other musculoskeletal disorder.
- LD, autistic children were excluded.

Tools used

Academic performance rating scale Vanderbilt Teacher rating scale.

Duration of the study

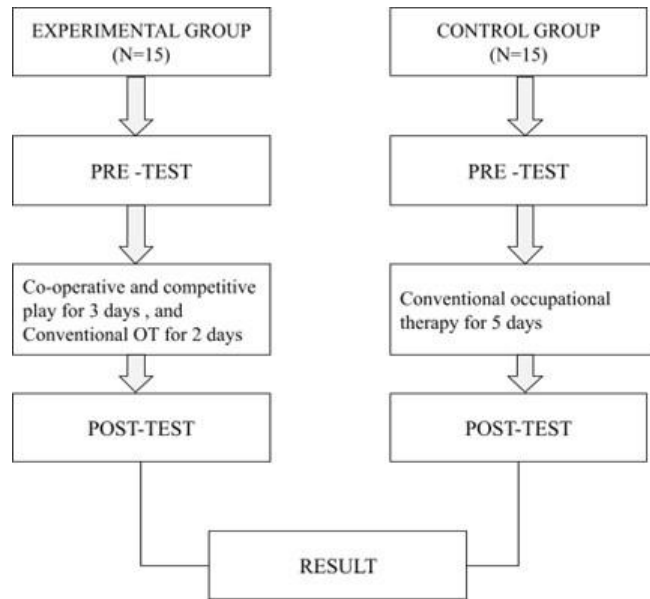
The study was conducted for 3 months, 3 sessions per week for 45 minutes.

Procedure

A total of 30 ADHD children were selected according to the inclusion criteria. The sample was then divided into 2 groups 15 in the control group and 15 in the experimental group. The children's academic performance was rated with the help of an academic performance rating scale both in the control and experimental group. The control group receives conventional occupational therapy and the experimental group receives cooperative and competitive play. Post-test scores were then collected from both groups and the results were compared.

Intervention protocol

The experimental group underwent a 45 minutes session that included cooperative and competitive plays like Jumping rope, Hopscotch -Ring maze, Tape trail, Target hitting, ball matching, balloon games, tug of war, animal walking, shooting hoops, obstacle crossing, and parachute.



DATAANALYSIS AND RESULT

Table 1 Statistical analysis of pre-test and post-test in control group

	Mean	N	Z value	p value
Cntr_Pre	38.93	15	-3.436	0.001*
Cntr_Post	42.27	15		

* Significant at 5% alpha level

Since the p-value of 0.001 is lesser than 0.05, an alternate hypothesis is accepted. Hence, there is a statistically significant difference between pre-test and post-test scores in the Control Group of the APRS scale. This suggests that the intervention received by the control group had significant improvement.

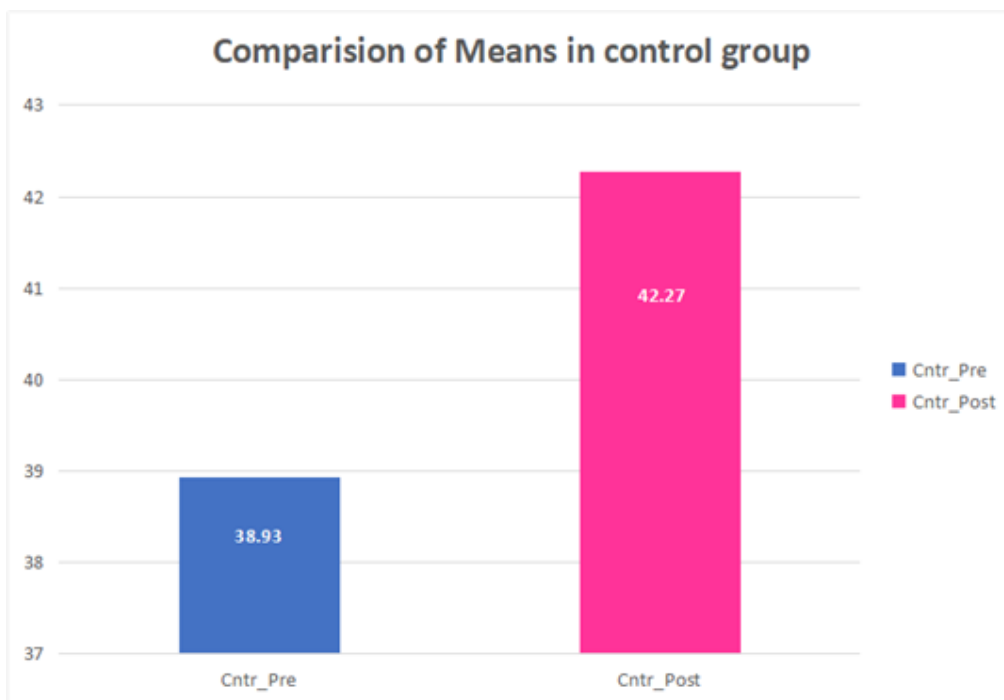


Figure 1:

Table 2 Statistical analysis of pre-test and post-test in experimental group

	Mean	N	Z value	p-value
Expt_Pre	39.27	15	-3.425	0.001*
Expt_Post	48.2	15		

* Significant at 5% alpha level

In the Experimental group since the p-value of 0.001 is less than 0.05, the alternate hypothesis (2) is accepted. Hence, there is a statistically significant difference in the Experimental Group between pre-test and post-test scores of the APRS scale. This suggests that the intervention received by the experimental group had significant improvement.

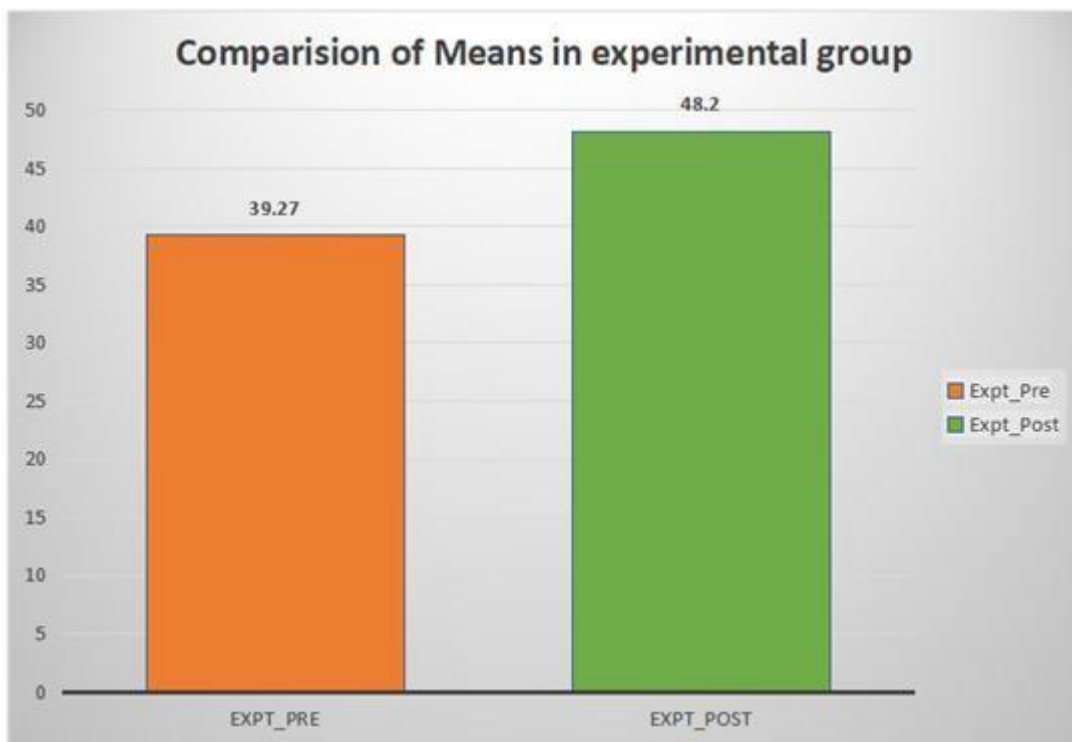


Figure 2:

Table 3 Statistical analysis between the post-test scores of the control and experimental group

	Mean	N	Z value	p value
Cntr_Post	42.27	15	2.42647	0.0151*
Expt_Post	48.2	15		

*Significant at 5% alpha level

Since the p-value of 0.0151 is lesser than 0.05, the alternate hypothesis is accepted. Hence, there is a statistically significant difference in post-test scores between the Experimental and Control groups of the APRS scale. This suggests that the intervention received by the experimental group had more improvement when compared to the control group.

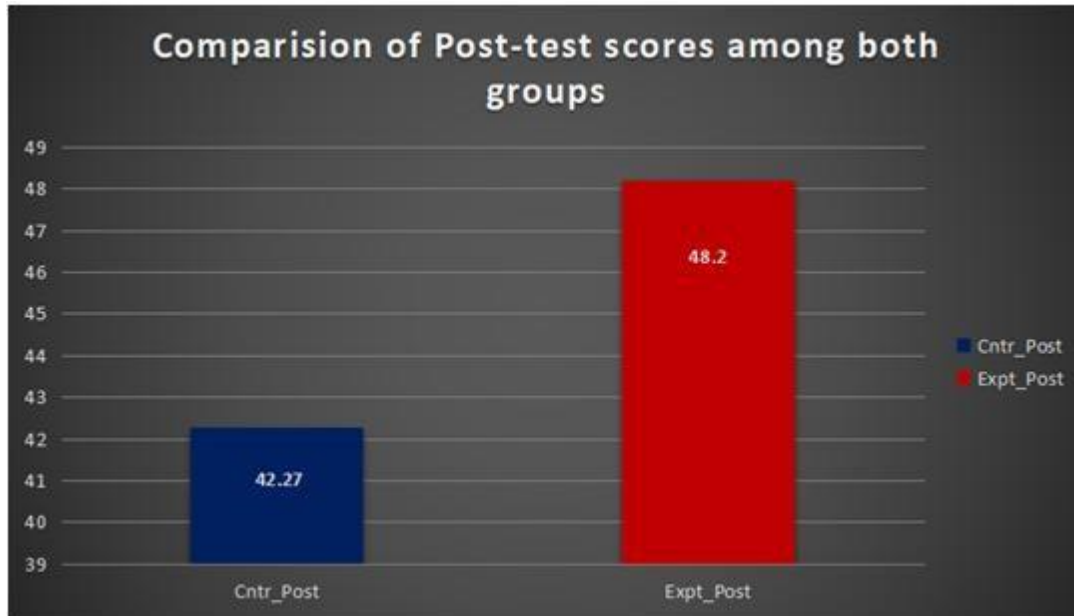


Figure 3:

DISCUSSION

The purpose of this study is to examine the effect of cooperative and competitive play to improve academic performance among ADHD children.

The results showed in the **table no.4.1** and **graph 4.1**, the comparison of the academic performance rating scale between pre-test and post-test mean scores which is 38.93 and 42.37 and the „Z“ value is -3.436 and „P-value is 0.001 is lesser than 0.05, alternate hypothesis(1) is accepted. This suggested that conventional occupational therapy has a significant improvement in the control group. This correlates with the study of **R13 Bhavy Gaur Chandrakar1, Chetna Dugga (2017)**, this study is one of the few published analyses on pre-and post-intervention outcomes in children with ADHD receiving OT as a critical component of a larger multidisciplinary intervention.

Table no.2 and **graph no.2** results showed that comparison of the academic performance rating scale between pre and post-test mean scores among the experimental group which was 39.27 and 48.2 and the „Z“ value is -3.425 and „P-value is 0.001 is lesser than 0.05, alternate hypothesis (2) is accepted. This indicated that there is a statistically significant difference in the experimental group with the intervention of cooperative and competitive play along with conventional occupational therapy. This correlates with the study of **R2 Barzegary, Zamini, S (2011)**, showing intervention with watch ring play therapy through token economy has a significant effect on ADHD boys to improve their attention.

In **table no.3** and **graph 3** the result shows the academic performance rating scale scores between the control group and the experimental group in the post-test. The mean value of the control group post-test is 42.27 and the mean value of the experimental group post-test is 48.2 and the „Z“ value is 2.42647 and the P-value is 0.0151, the alternate hypothesis is accepted (3). Hence, there is a highly statistically significant difference in post-test scores between the Experimental and Control groups of the APRS scale. This suggests that the intervention received by the experimental group had more improvement when compared to the control group. The previous article, **R1 Maryam & Zahra Dasht Bozongi (2016)** supports this result; the study includes play therapy to reduce symptoms of ADHD children, including 8 therapy sessions. And the result shows that there is a significant difference in the mean scores of pre and post-test in the experimental group.

The results show the differential effects on treatment groups with play therapy and that the treatment group showed the greatest improvement on dependent variables over an extended period.

The values are statistically significant and the findings are in line with the earlier researchers. Thus, the null hypothesis has been disproved and an alternative hypothesis has been proved.

CONCLUSION

The statistical result showed that there was a high statistically significant difference between the post-test scores of the

control and the experimental group. Hence this study concluded that cooperative and competitive play is effective in improving academic performance among ADHD. The result of the present study indicated that play therapy is effective for children who are dealing with poor academic performance. Other studies also show that this kind of therapy is effective in treating ADHD.

LIMITATIONS

- The study was done with only a small group.
- The study was not compared to gender differences.

RECOMMENDATIONS

- The same study can be done with a large sample size.
- It can be done over a longer period of time.
- It can also be done with other pediatric conditions.

REFERENCES

- [1]. Novak, Iona & Honan, Ingrid. (2019). Effectiveness of paediatric occupational therapy for children with disabilities: A systematic review. *Australian Occupational Therapy Journal*. 66.
- [2]. Alamdarloo, Ghorban & Shojaee, Setareh & Shalani, Bitra & Ali, Abbas & Khanzadeh, Hossein. (2016). THE EFFECT OF A GROUP ART THERAPY ON THE SELF-RESTRAINT OF STUDENTS WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER. *Journal of Applied and Fundamental Sciences*. 461-469.
- [3]. Zaker Shoshtari, M., & Dasht Bozorgi, Z. (2016). The Effectiveness of Play Therapy on Reduction of the Symptoms of Attention Deficit Hyperactivity Disorder (ADHD) in Children. *Asian Social Science*, 12(6), 188.
- [4]. El-Nagger, N. S., Abo-Elmagd, M. H., & Ahmed, H. I. (2017). Effect of applying playtherapy on children with attention deficit hyperactivity disorder. *Journal of Nursing Education and Practice*, 7(5), 104
- [5]. Barzegary, L., & Zamini, S. (2011). The Effect of Play Therapy on Children with ADHD. *Procedia - Social and Behavioral Sciences*, 30, 2216–2218.
- [6]. Chandrakar, Bhavya & Duggal, Chetna & Kulkarni, Sandhya & Chatterjee, Sohini & Dalwai, Samir. (2017). Effect of Occupational Therapy as Part of a Multidisciplinary Intervention, on Functioning in Children with Attention Deficit Hyperactivity Disorder. 141-147.
- [7]. Blanco, P. J., & Ray, D. C. (2011). Play Therapy in Elementary Schools: A Best Practice for Improving Academic Achievement. *Journal of Counseling & Development*, 89(2), 235–243.
- [8]. Khaledi, S., ValidiPak, A., Mirkhan, I., & Atai, M. (2014). The Positive Impact of Play Therapy on Writing Performance of Students With Dysgraphia. *International Journal of School Health*, 1(2).
- [9]. Wennberg, B., Janeslätt, G., Kjellberg, A., & Gustafsson, P. A. (2017). Effectiveness of time-related interventions in children with ADHD aged 9–15 years: a randomized controlled study. *European Child & Adolescent Psychiatry*, 27(3), 329–342.
- [10]. Gehan M. Ahmed and Samiha Mohamed, Effect of Regular Aerobic Exercises on Behavioral, Cognitive and Psychological Response in Patients with Attention Deficit-Hyperactivity Disorder, *Life Science Journal*, 2011;8(2).
- [11]. Power, T. J., Mautone, J. A., Soffer, S. L., Clarke, A. T., Marshall, S. A., Sharman, J., Blum, N. J., Glanzman, M., Elia, J., & Jawad, A. F. (2012). A family–school intervention for children with ADHD: Results of a randomized clinical trial. *Journal of Consulting and Clinical Psychology*, 80(4), 611–623.
- [12]. Kim, M. J., Park, H. Y., Yoo, E. Y., & Kim, J. R. (2020). Effects of a Cognitive-Functional Intervention Method on Improving Executive Function and Self-Directed Learning in School-Aged Children with Attention Deficit Hyperactivity Disorder: A Single-Subject Design Study. *Occupational Therapy International*, 2020,1–9.
- [13]. Coelho, L. F., Barbosa, D. L. F., Rizzuti, S., Bueno, O. F. A., & Miranda, M. C. (2017). Group cognitive-behavioral therapy for children and adolescents with ADHD.
- [14]. Cordier, R., Bundy, A., Hocking, C., & Einfeld, S. (2009). A model for play-based intervention for children with ADHD. *Australian Occupational Therapy Journal*, 56(5), 332–340.
- [15]. Yamashita, M., & Yamamoto, T. (2021). Impact of Long-Rope Jumping on Monoamine and Attention in Young Adults. *Brain Sciences*, 11(10), 1347.