

POSTURAL STABILITY EXERCISE ON STATIC BALANCE IN ATTENTION DEFICIT / HYPERACTIVITY DISORDER (AD / HD) CHILDREN IN PRADNYAGAMA FOUNDATION

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ABSTRACT

Static balance disorders are often found in children with attention deficit / hyperactivity disorder (AD / HD) which causes difficulty maintaining a position and concentration on one thing. The development of balance is influenced by the maturity of specific nerve cells, experience, and environment. If this is left untrained it will certainly cause problems in the development process one of which is activities that require children to sit still or stand up. This study aims to look at postural stability exercise in improving static balance in children with attention deficit / hyperactivity disorder (AD / HD). The research is experimental with the design of one pre-test and post-test group design. Exercise is carried out three times a week for four weeks. Static balance measuring instrument with one leg stance test. Data analysis was obtained by descriptive analysis and normality test with shapiro Wilk test, and hypothesis testing was carried out by Wilcoxon test. The analysis shows that postural stability exercise increases static balance by 94.9% from the average before 9.83 and after 19.16 so that postural stability exercise is proven to improve static balance in children with attention deficit / hyperactivity disorder (AD / HD) ages 7-8 year at Pradnyagama Foundation.

Keywords: Postural stability exercise, static balance, AD / HD

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1. INTRODUCTION

At every stage of the child growth process has a distinctive characteristic so that if a disturbance at one of these stages will have an impact on the next life. One of the child development problems that causes motor disorders is a child with an attention deficit / hyperactivity disorder commonly referred to as AD / HD.

Based on the register data and AD / HD at the Sanglah Hospital Development Center in Denpasar, 2014-2016, the number of children with AD / HD was 48

people consisting of 37 men and 11 women (Megapuspita, 2017).

Children with attention deficit often have difficulty maintaining a position and focusing on one thing, which causes postural changes in the body. To detect that a child has difficulty in regulating his body balance, it must be considered whether the child is able to master some motor skills according to his age well or not (Hildayani, 2009).

Postural stability exercise or better known as core stability exercise is one of

the exercises given to form good postural. The principle of Postural stability exercise is to train and activate the core muscles will increase postural stability and body balance.

2. METHOD

2.1 Scope of Research

The research was conducted at Pradnyagama Foundation which is the foundation of a psychology consultation center and therapy for children with special needs. Subjects were given 3 times postural stability exercise training and carried out for 4 weeks. The research design is Pre Test and Post Test Design.

2.2 Population and Samples

The study population was all children known to AD / HD in the Pradnyagama Foundation totaling 42 children. The number of subjects in this study were 12 people who met the following criteria: Age 7-8 years and AD / HD screening results ≥ 13 .

2.3 Data Collection

Data collection was carried out before and after being given Postural stability exercise training. To measure static balance measurements are carried out using the One Leg Stance test.

2.4 Analisis Data

Data analysis was carried out as follows:

1. Descriptive analysis and Normality Test data using the Shapiro-Wilk test.
2. Hypothesis testing using the Wilcoxon Test.

3. RESULTS AND DISCUSSION

Table I
 Characteristics of Research Subjects

Characteristics	Group (n=12)	
	n	%
age	7 year	11 91,7
	8 year	1 8,3

Source: (Primary Data, 2018)

Based on Table 1, it can be seen the age characteristics of the research subjects. The age of 7 years is 11 people (91.7%) and the age of 8 years is 1 people (8.3%).

Table II
 Descriptive Measurement of Static Balance Before and After Treatment

Parameter	group (n=12)		
	before	after	enhancement
Min	15	28	
Max	6	11	
Average	9,83	19,16	94,9%
SD	3,53	5,85	

Source: (Primary Data, 2018)

Based on Table 2, it can be seen that the average value before doing the exercise is 9.83 and the mean value after doing the exercise is 19.16. Increased static balance before and after doing exercise is 94.9%.

DATA NORMALITY TEST
 Table III
 Normality test

Treatment	Saphiro wilk test (p)
	After Treatment
Before Treatment	0,247

Source: (Primary Data, 2018)

In Table 3 the p value before treatment is 0.045 and the p value after

treatment is 0.247. When viewed from the p value before the treatment is less than 0.05, the data before treatment is not normally distributed. Based on the results of the normality test of this data, eating the next hypothesis test using the Wilcoxon test.

TEST HYPOTHESIS BEFORE AND AFTER
TREATMENT

Table IV
Hypothesis testing
before and after treatment

Treatment	Median	Wilcoxon	
		z	p
after	10	-3,06	0,002
before	20,5		

Table 4 shows that the value of the hypothesis test using the Wilcoxon test obtained a p value of 0.002 (<0.005). These results indicate that there is an increase in static balance after being given Postural stability exercise training in AD / HD children aged 7-8 years in the Pradnyagama foundation.

An increase in static balance in children with AD / HD after being given Postural stability exercise training. The mechanism of increasing static balance after doing postural stability exercise aims to improve trunk stability by strengthening the core muscle and contracting the abdominal muscles and lumbo pelvic which are the muscles that act as active spinal stabilizers. Strong core muscles will improve balance and stability to maintain position or initiate a movement (Ghaeni, S, 2015).

Giving postural stability exercise can increase the strength of the core muscles namely the abdominal muscles and the lumbo pelvic area muscles which function as active stabilizers. Strong core muscle and good stability, off mass center (COM) and center of gravity (COG) can be maintained above base of support (BOS) so that it can improve movement control which also increases static balance in children with AD / HD.

4. CONCLUSIONS

Based on the results of the research analysis it was concluded that postural stability exercise can improve static balance in children with AD / HD.

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