

THE EFFECT OF BRAIN GYM TOWARDS CHANGES OF STRESS LEVELS IN GRADE VI CHILDREN DURING DISTANCE LEARNING

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ABSTRACT:

In an academic environment, stress is something that often occurs by students, both consciously and unconsciously. Especially when there is a covid-19 pandemic where academic activities apply distance learning. Stress can occur due to the large workload, parental demands and lack of peer interaction. The purpose: To analyze the effect of brain exercise on changes in stress levels in children during distance learning at SD Darul Ulum Bungurasih. Method: Using a pre-experimental design with One Group Pre-test and Post-test, the population was 83 children with a sample size of 69 children from 28 grade V and 41 grade VI children. The sampling technique used random sampling (probability sampling) and group sampling (cluster sampling). The independent variable is brain exercise and the dependent variable is the change in stress levels in children during distance learning at SD Darul Ulum Bungurasih. The questionnaire used is PSS-10. Data analysis using Wilcoxon test. The results of data analysis obtained by the Wilcoxon test were $p = 0.000 < 0.05$, meaning that there was an effect of brain exercise on changes in stress levels in children during distance learning at SD Darul Ulum Bungurasih. The conclusion of this study is that brain exercise is good for reducing stress levels in children and can be applied in school regularly and correctly.

Keywords: Children, stress levels, brain gym

PRELIMINARY

Stress is a problem that is often experienced by humans without realizing it. Stress can be experienced by all people and various ages, ranging from children, teenagers, adults, or the elderly. According to Lin and Huang (2014) in the journal *Stress Theory: Stimulus, Response, and Transactional* (Gaol, 2016) stated that so much stress can be harmful to everyone, including students. In an academic environment, stress is the most common experience experienced by students, whether they are studying at the school or college level (Gaol, 2016). This is due to the many academic demands that must be faced, such as exams, assignments, and soon (Gaol, 2016). Currently, academic learning in schools is temporarily unable to be carried out due to the Covid-19 pandemic. Therefore, the government through the minister of education implements an online learning process, where students carry out distance learning academic activities, which are usually carried out in schools now carried out at their respective homes. During the implementation of online learning during the pandemic, many people complained about their children. Reporting from the *Liputan6.com* newspaper (2020) the Indonesian Child Protection Commission (KPAI) stated, during learning from home for school students, there were 51 complaints from a number of students from various regions who came in and complained about the heavy task given by the teacher to be done with a set deadline. In addition, based on the distribution of the initial questionnaire conducted by researchers regarding stress levels to 40 grade VI students of SD Darul Ulum Bungurasih on September 26, 2020 using the PSS-10 questionnaire, it was found that 13 children experienced mild stress, 25 children experienced moderate stress, and 2 children are under a lot of stress. Reporting from the *Liputan6.com* (2020) news page, the Head of the East Java Province Women's Empowerment, Child Protection and Population Service (DP3AK) said 1.6% of children experienced depression out of 42 million residents in East Java, which means there are as many as 16,000 children in Java province. East who experienced depression during the Covid-19 pandemic. During distance learning carried out, without realizing or realizing it by the child, they experience stress, where this stress is caused by various causes ranging from the many tasks given by the teacher in a short time, the inhibition of facilities and infrastructure, namely ownership of cellphones or gadgets, where not all children have so that sometimes children have to be willing to take turns with their parents, not take lessons, or even go to a friend's house who has a gadget to join in learning, besides that, many complain about the high cost to purchase quotas, and little time to interact with other children. peers because of the many assignments given by the teacher because each subject has different tasks with different levels of difficulty. If the child experiences stress, it will have a negative impact on his body, such as difficulty concentrating, reluctance to do the tasks assigned by the teacher, headaches, irritability, reluctance to take lessons, and getting sick. So that stress will interfere with children's daily activities or activities. Therefore, efforts are needed to reduce stress in children. One way to reduce stress in children is to do brain exercises. Brain exercise or better known as brain gym is a series of simple movements that are carried out to stimulate the work and function of the brain to the maximum (Dikir, 2016). This movement is made to stimulate the left and right brain (lateral dimension), relieve or relax the back of the brain and the front of the brain (focusing dimension), stimulate the feeling or emotional system, namely, the midbrain (limbic) and the cerebrum (focusing dimension). Brain exercise movements are made to stimulate (laterality dimension), relieve (focusing dimension), or relax (focusing dimension) (Rahayu, 2017). In Nurdin's research (2015), regarding the effect of brain exercise on stress in students of Madrasah Mualimin Yogyakarta, there was a decrease in the treatment group with a value of $p = 0.012$, which indicates

that there is an effect of brain exercise on stress levels in students. Research conducted by Ni Putu Aniek Ratna Sari (et al) in 2015, showed that brain exercise was effective in dealing with stress. In the study of Dikir, et al (2014) in fifth grade children at SD Negeri Pokoh 1 Wedomartani showed that there was an effect of brain exercise on the stress level of students before and after being given brain exercise, before being given brain exercise the average student was at a moderate stress level then after being given brain exercise there is a decrease in stress levels to normal.

METHOD

In this study, a pre-experimental design was used, namely the One Group Pre-test and Post-test research designs, to determine the effect of brain exercise on reducing stress levels in sixth graders during distance learning at SD Darul Ulum Bungurasih. This study did not use a comparison group (control), only a treatment group (experimental). Respondent criteria: 10-13 years old, in good health, and willing to be a respondent. The population of 83 respondents consisted of children in grades V and VI. The sampling technique used was random sampling in groups (cluster sampling). The sample is 69 respondents. In this study, it was conducted online, by providing brain exercise tutorial videos and then carried out for 6 days with 2-3 times a day for 10-15 minutes. In collecting questionnaire data using online. The questionnaire used in this study used the PSS-10 patent questionnaire (Perceived Stress Scale-10). Interpretation of results in the light (0-13), moderate (14-26), and severe (>26) categories. Analysis of the data used in this research uses the Wilcoxon match pair test with $\alpha = 0.05$.

RESULTS AND DISCUSSION

1. Frequency distribution of respondent characteristics by gender

Table 1
Frequency distribution of respondent characteristics by gender

No.	Gender	Frekuensi (n)	Presentage (%)
1.	Male	29	42.0
2.	female	40	58.0
	Total	69	100

Source: Primary Data, 2021

Based on table 1 the frequency distribution of respondents' characteristics by gender shows that most of the respondents are female as many as 40 respondents (58%). According to researchers, women are more prone to stress because women are more easily carried away by feelings or easily change emotions than men. In addition, women in dealing with stressors are easily carried away while men think and act more.

According to Kaplan and Sadock (Ambarwati, 2017), stress is more common in women than men, because there are hormonal differences and differences in stressors in men and women. In women there is the hormone estrogen where this hormone can make women more prone to stress

2. Frequency distribution of respondents' characteristics by age

Table 2
Frequency distribution of respondents' characteristics by age

No.	Age	Frequency (n)	Percentage (%)
1.	6-11	34	49.3
2.	12-16	35	50.7
Total		69	100

Source: Primary Data, 2021

Based on table 2 the frequency distribution of respondents' characteristics by age shows that most of the respondents are 12-16 years old (early teens) as many as 35 respondents (50.7%). According to researchers, the age range of 12-16 years is a transition period for children to become adults, so that children will look for their own identity and identity. If the child experiences an obstacle during the child-to-adult transition, the child will experience stress due to pressure from outside or from himself, for example, feeling insecure, feeling ashamed of others, and being easily offended by trivial things.

Where in the early adolescent stage (12-16 years) is a period of increasing and rapid growth, where the transition period between childhood to adulthood is characterized by secondary characteristics that begin to appear, such as changes in voice in boys and breast growth in children. women (Sarwono, 2011).

3. Frequency distribution of respondents' stress levels before doing brain exercise

Table 3
Frequency distribution of respondents' stress levels before doing brain exercise

No.	Stress Levels	Frequency (n)	Percentage (%)
1.	Mild	10	14.5
2.	Moderate	57	82.6
3.	Hard	2	2.9
Total		69	100

Source: Primary Data, 2021

Based on table 3 the frequency distribution of respondents' stress levels before doing gymnastics shows that the most respondents experience stress in the moderate category as many as 57 respondents (82.6%). According to the researcher, there are several things that influence a child to experience stress during distance learning, namely the workload that is given by the teacher, the child's lack of interest in completing school work, the lack of interaction between children and their peers due to online learning and boredom felt by children during distance learning. In addition, there are demands from parents to excel in school and get good grades in each subject. With this feeling of pressure, it will cause a burden on the child and cause the child to be stressed.

Stress is the body's reaction to changes in psychological stressors that cause feelings of discomfort in people who experience it. Stress in children occurs when children feel unable to withstand pressures that come from outside themselves (external pressure) or within themselves

(internal pressure) (Oktamiati,2013). According to Carton and Goodboy(2015) in Lismiati (2018) students whoexperience excessive stress will tend tointeract less with peers. Symptoms that appear include anxiety, irritability, dizziness, and social isolation. most respondents experience stress in the moderate category as many as 57 respondents (82.6%).

4. Frequency distribution of respondents'stress levels after doing brain exercise

Table 4
Distribution of the frequency of respondents' stress levels afterdoing brain exercise

No.	StressLevels	Frequence (n)	Precentage (%)
1.	Mild	60	87.0
2.	Moderate	9	13.0
Total		69	100

Source: Primary Data, 2021

Based on table 4 the frequencydistribution of respondents' stress levelsafter doing gymnastics shows that mostof the respondent experience stress in the mild category as many as 60 respondents (87%). Analysis of the effect of brain exerciseon changes in stress levels in children atSD Darul Ulum Bungurasih

Table 5
Analysis of the effect of brainexercise on changes in stress levels in children at SD Darul UlumBungurasih

No.	StressLevels	Before		After	
		Frequence (n)	Precentage (%)	Frequence (n)	Precentage (%)
1.	Mild	10	14,5	60	87,0
2.	Moderate	57	82,6	9	13,0
3	Hard	2	2,9	0	0
Total		69	100	69	100

Wilcoxon test = 0,000 alpha = 0,05

Source: Primary Data, 2021

Based on table 4 the frequencydistribution of respondents' stress levels after doing gymnastics shows that most ofthe respondentsexperience stress in the mild category as many as 60 respondents (87%). And based on the results of the Wilcoxon statistical test, the p-value is 0.000 where $p\text{-value} \leq 0.05$, it can be concluded that H_0 is rejected and H_1 is accepted, which means that there is aneffect of brain exercise on changes in stress levels in fifth and sixth graders in elementary school Darul Ulum Bungurasih.

The results of this study are supported by research conducted by Dikir, et al (2014) on fifth graders at SD Negeri Pokoh 1 Wedomartani showing that there is an effect of brain exercise on students' stress levels before and after being given brain exercise. In addition, research conducted by Lismiati (2018) on the effectof brain gym on changes in stress levels inadolescents (aged 12-15 years), there is aneffect of brain gym on changes in stress levels in adolescents (aged 12-15 years).

CONCLUSION

The conclusions that can be drawn from the results of research conducted on children in grades V and VI are as follows there is an effect of brain exercise on changes in stress levels in children in grades V and VI at SD Darul Ulum

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