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The Effect of Cutting Occupational Therapy to Increase Soft Motoric of Children With Autism

Riza Mahdalena[1,*] Sujarwanto[2] I Ketut Budayasa[3]

[1] *Department of Special Education, Universitas Negeri Surabaya, Surabaya, Indonesia*
[2] *Faculty of Education, Universitas Negeri Surabaya, Surabaya, Indonesia*
[3] *Faculty of Mathematics and Natural Sciences, Universitas Negeri Surabaya, Surabaya, Indonesia*
Corresponding author. Email: rizamahdalena1997@gmail.com

ABSTRACT

The effect of cutting occupational therapy to increase the soft motoric of Children with Autism. The purpose of this research is to test the influence of the skill of putting on the soft motoric of Children with Autism. This research was conducted using a quantitative with the draft of Single-Subject Research (SSR). The data were analyzed with pre-test and post-test. The results showed that occupational therapy cutting can improve the smooth motoric skills of Children with Autism.

Keywords: Cutting Occupational Therapy, Soft Motoric, Children with Autism

1. INTRODUCTION

Autism is the inability of a child to relate to others, a child's language disruption that is seen from delayed mastery, mutest, echolalia, sentence reversal, as well as a stereotype and repetitive play activities, strong memories, and great ambitions to maintain regularity in the environment [1]. So that in its service in the education sector it should be emphasized more on concrete material and avoid abstract material.

Autism (also known as infantile autism), is a disorder that is characterized by the existence of disturbances that are carried out successively in reciprocal social interactions, the existence of deviations in communication, as well as limited behavior patterns [1]. So that children with autism problems need very easy communication so the child understands what is being communicated.

Autism is a disorder that occurs in the development of brain function which includes social, imagination, and verbal (language) and nonverbal communication [1]. Every child in general has a period of development. One of them is the development of children's motor skills. Based on observations at the SLB Autism Laboratory of the State University of Malang, soft motoric skills of some children at the junior level are not very developed. Some children still show delays in soft motoric skills, especially in the cutting sector, which is characterized by the presence of children who have not been precise in cutting according to lines and shapes. The case mentioned that children have difficulty in developing soft motoric skills, which are caused by several factors, such as environmental factors, maturity, opportunities, learning, and practicing. Another contributing factor is poor eye coordination with hand muscles.

The cause of autism is very complex, what is known now is a disturbance in central nerve function. This disorder is caused due to abnormalities in brain structure that may occur when the fetus is 3 months old. Mothers may have the TORCH virus (too, rubella, cytomegaly, herpes), consume foods that contain chemicals that can damage the growth of brain cells, have heavy bleeding, and breathe toxic air [2].

Genetic factors also affect the occurrence of autistic disorders. It is estimated that human life today uses too many toxic chemicals that can cause mutations in genetic disorders. The bad digestion also causes autism disorders, the presence of fungi that are too much in the intestine so that it can inhibit enzyme secretion. The intestine cannot absorb food juices but changes to "morphine" which affects the development period in children.

Soft motoric movements are a movement that utilizes only certain body parts and is carried out by small muscles so that soft motoric movements do not need energy but require careful coordination and accuracy. Examples of movements that use soft motoric skills are

movements taking objects using the thumb and index fingers, sewing, cutting, writing, drawing, and so on [3].

The movements when cutting utilize certain body parts and begin with the development of small muscles such as the ability to use the fingers and the flexible movements of the hand movements, training the coordination of the child's eyes. One of the developmental achievements is the ability to cut along straight lines, curves, circles, rectangles, triangles, and cut according to the pattern [4].

Soft motoric learning in schools is learning that connects physical skills with small muscles and coordination between eyes and hands. Soft motoric nerves can be trained and developed with the existence of activities and stimuli that are carried out routinely and continuously.[3]

Motoric skills are one's skills in showing basic movements to more complex movements. Soft motoric skills are skills that require control of small muscles and require a high level of precision. The process of soft motoric development in special education should get the attention of educators with the right attention. The teacher as one of the motivators of success in learning in SLB always strives to make learning go according to the applicable learning rules [5].

Cutting is an activity of cutting or trimming using scissors.[3] Cutting can train children to be able to use tools and practice skills in cutting out object images. Cutting will help develop soft motoric skills for children because with the right cutting activities, choosing the part that has to be cut is good motoric training and skill for the child. Cutting activities can be done with paper cutting activities following the requested pattern.

The purpose of this study is to examine the effect of cutting skills on the fine motor skills of autistic children in SLB. The effect of occupational therapy cutting can be seen from the difference in the pretest and posttest scores obtained by students.

2. METHOD

The type of research used is descriptive quantitative experimental research. The experimental method is a research method used to look for the influence of certain treatments on other things under controlled conditions [6]. The experimental research design can be broadly divided into two groups, namely group design, and single-subject design [7].

The research "The Effect of Cutting Occupational Therapy to Increase the Soft Motoric of Children with Autism" uses a quantitative approach with a Single Subject Research design or research with a single subject, namely research that only focuses on individual data as research samples. This method was chosen because this research did not use inter-group performance, but rather

compared the same subjects in different conditions namely the baseline and intervention groups. Baseline (A) is a condition where target behavior measurement is done before any intervention is given, while intervention (B) is a condition where target behavior is given treatment or intervention. The stages carried out in the A-B-A design include the collection of target behavior data at baseline-1 (A1) conditions. After the data are stable at baseline conditions, further interventions are given continuously until they reach a clear trend and level. Then the baseline activity is repeated on the same subject (A2).

This research uses two variables, the dependent variable, and the independent variable. Experimental research uses the dependent variable and the independent variable. The independent variable is known as intervention or treatment, so the independent variable of this research is cutting skills, while the dependent variable is the increase in children's soft motoric skills.[7] This research uses cutting techniques with various patterns consisting of 5 patterns in which each pattern of the child is asked to cut as much as 1 time. The research consisted of 3 sessions in each baseline and 5 sessions in an intervention where 1 session consisted of 2 hours of learning (60 minutes). Target behavior can be seen from the large number of cutouts that fit the pattern, which is as many as 5 patterns.

Subjects used as research are 2 male students with the initials B and M at SLB Autism Laboratory State University of Malang. The soft motoric skills of B and M have not yet been carried out to the maximum, just simply cutting out without knowing the existing patterns. B is a child with autism who is classified as passive, he is often silent if not given the activity. M is an ordinary child with autism, inactive, and also not passive. He loves drawing activities, so he often draws in any book. M must be accompanied in working on the problem because if not accompanied he will draw whatever he wants.

In this study, the instrument used was an observation sheet that had been modified following the cutting skills component. It also uses oral question sheets and assessment sheets that are modified according to the ability of the research subject and according to the ability to be measured.

Data collection techniques used are (1) Observation through direct observation of research subjects to observe the extent of the ability of research subjects before being given an intervention (pre-test), during the intervention, and after the intervention (post-test). In this research the observations given have the aim to find out the soft motoric skills of children with autism who are the subject of research. (2) Documentation in the form of photographs during the research activities, namely during the baseline phase (A1), intervention (B), and the second baseline (A2). (3) Performance Test which aims to

determine the soft motoric skills of children with autism who are the subject of research.

In this single-subject case research, the use of complex statistics is not done but rather uses simple descriptive statistics. Descriptive statistical analysis is a visual analysis that consists of analysis in conditions and analysis between conditions because research with a single subject focuses more on individual data rather than groups. In analyzing data in research with a single subject there are several things, including making graphics, using descriptive statistics, and using visual analysis. The use of graphical analysis is expected to clarify the picture of an experimental condition both before treatment (baseline-1) and after treatment (intervention) and changes that occur after treatment (baseline-2). Data were analyzed using graphical visual analysis techniques, where the results of the data were plotted into graphical form. Furthermore, the data are analyzed based on the components in each condition (A-B-A), in the form of an analysis of conditions and analysis of conditions.

Therapies that can be given to children with autism include occupational therapy, speech therapy, medical therapy, play therapy, food therapy, integration of sensory therapy, auditory therapy, and biomedical therapy [4].

In this case, the researchers chose to use occupational therapy by cutting to develop the soft motoric skills of children with autism. Busy therapy or commonly called occupational therapy is a therapy that aims to help a person in mastering soft motoric movements better. This occupational therapy is done to strengthen, improve muscle coordination and skills in autistic children [8].

Occupational therapy is a therapy that exercises subtle movements of the hands and integration of basic movements that have been mastered through the availability of appropriate tools and games [9]. Based on some of the opinions above it can be concluded that occupational therapy is a therapy used to train a child's soft motoric skills in the presence of games or tools that are suitable for the child's condition.

Cutting is the activity of cutting various types of paper or other materials by following certain lines, lines, or shapes which is one of the activities to develop children's soft motoric skills. Eye and hand coordination can develop with cutting. When cutting, the child's fingers will move according to the shape pattern to be cut [5].

Movement when cutting involves only certain parts of the body and begins with the development of small muscles such as the skill of using the fingers and the flexible movements of the hands, training the coordination of the child's eyes. One of the developmental achievements is the ability to cut along straight lines, curves, circles, rectangles, triangles, and cut the following patterns [4]. Some of the opinions

above make researchers want to prove the effect of cutting activities can improve the soft motoric skills of children with autism.

3. RESULT AND DISCUSSION

The research was conducted using the Single Subject Research (SSR) research method with A-B-A design for 11 sessions. With details of 3 baseline-1 sessions (A1), 5 intervention sessions (B), and 3 baseline-2 sessions (A2). Baseline-1 (A1) condition starts from the first session to the third session. Then the intervention condition (B) starts from the fourth session to the eighth session. And baseline-2 (A2) starts from the ninth session to the eleventh session. In this research, there was a repetition of the baseline conditions because baseline-2 (A2) conditions were used to make conclusions about the effect of the intervention on target behavior.

At baseline conditions students are given 5 patterns in each session without giving even a little treatment, whereas in the intervention condition students work on the intervention questions (equating the picture on the drawing card and matching the picture with its shape), then students cut out the pattern on the paper using scissors provided by researchers. Data is then collected on a worksheet. On the worksheet, the researcher will correct the work of the student then give a grade according to the assessment criteria contained in the Intervention Learning Plan of the intervention. Data collected will be converted into a percentage (%). The value on each indicator is calculated using the score obtained by students divided by the maximum score and then multiplied by 100%. The score results are then analyzed based on the components in each condition (A-B-A), in the form of an analysis of conditions and analysis of conditions, which are then plotted in the form of visual graph data.

The information in graph 1 about the acquisition of the results of the research of soft motoric skills of children with autism shows that the soft motoric abilities of children with autism in baseline-1 conditions are quite good with the acquisition of 75% from the first session to the third session. Then the child is given treatment in the form of cutting activities in the intervention condition, the direction of the child graph shows the same results with the value at baseline-1, with the highest value of 75% and the lowest value of 62.5%. In the baseline-2 condition, the results with the same value from the ninth session to the eleventh session were 81.25%, but this value is higher than the value in the baseline-1 condition, in which all values are 75%. During baseline-1 to baseline-2, B experienced an increase in holding the scissors, despite a slight increase.

The information in graph 2 about the acquisition of the results of the research of soft motoric skills of children with autism shows that the soft motoric abilities

of children with autism in baseline-1 conditions are good with the results of 87.5% in the first session and 81.25% in the second and third sessions. Then the child was given treatment in the form of cutting activities in the intervention condition, the direction of the child graph showed the same results with the value at baseline-1, with the highest value of 87.5% and the lowest value of 68.75%. At baseline-2 conditions showed results with a value of 87.5% in the tenth session and 93.75% in the ninth and eleventh session, this value is higher than the value at the baseline-1 condition, the highest value is 87.5% and the value the lowest is 81.25%. During baseline-1 to baseline-2, M has increased.

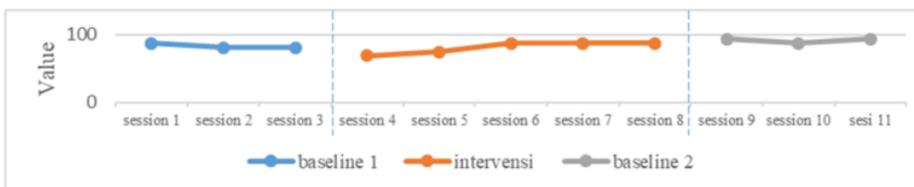**Figure 1** Acquisition of Soft Motoric Capability Research Result B.

Figure 2 Acquisition of Soft Motoric Capability Research Result M.

The benefit of cutting is that a child's soft motoric skills will get stronger if he often practices cutting. Cutting movements of the simplest cutouts will continue to be followed until the cutouts are increasingly complex when the child's soft motoric skills get stronger [4].

After conducting research and analysis of the acquisition value of B, obtained data on the ability of children before being given treatment or intervention is quite low. This is evidenced by the value at baseline-1 (A1) in the first session until the third session the child gets a value of 75%. The soft motoric abilities of the child do not experience any changes so that there is no change in the estimated direction and traces of the data (=). The mean level at baseline-1 (A1) is 75 with an upper limit of 80.6 and a lower limit of 69.4 calculation of the stability tendency based on the mean level, the upper limit, and lower limit so that the stability of the baseline-1 condition is obtained at 100%, which means the data is stable because the stability criteria used are 80-90% in this condition, the data shows stable results in the range of 75%. After the data is stable, then the intervention is given to the child. If the data at baseline-1 is stable, an intervention can be implemented. However, if the data are not yet stable, the intervention conditions cannot yet be carried out. The level change in this condition is equal to (0) which means that the child's soft motoric skills have no change.

B is a child with autism who has the characteristics of being late in his development and tends to do something repeatedly, this is related to the opinion of the characteristics of an autistic child that often arises during childhood include:(1) late development, (2) have an excessive sense of interest in objects, (3) refuse when hugged, (4) have sensory abnormalities, and (5) have a tendency to do things repeatedly [2]

After an assessment and analysis of assessment B, data obtained about the child's soft motoric skills after treatment or intervention is good. This is proven by the same value in the ninth session until the eleventh session, which is equal to 81.25%. At baseline-2 (A2) the soft motoric ability of children with autism does not change, so that the estimated direction and traces of the data do not change (0). The mean level in this condition is an amount of 81.25 with an upper limit of 87.35 and a lower limit of 75.15 calculation of the stability tendency based on the mean level, the upper limit, and lower limit so that the stability tendency obtained baseline-1 conditions of 100%, which means the data stable because the stability criteria used are 80-90%. In this condition, the data showed stable results in the range of 75%. The level change at baseline-2 is equal to (0) which means that the soft motoric abilities of the child do not change. But that does not mean there is no effect of the intervention on target behavior because it can be seen from the highest score and the lowest mean level, upper limit, the lower

limit at baseline-2 (A2) conditions higher than the highest score at baseline-1 (A1).

B's soft motoric skills have increased with the cutting skills, this is following the benefits of cutting, namely the cutting movements of the simplest scissors will continue to be followed until the more complex scissors when the child's fine motor skills are getting stronger [4].

Meanwhile, after conducting research and analysis of the acquisition value of M, obtained data about the ability of children before being given treatment or intervention is quite good, this is by the benefits of cutting, namely the child's soft motoric skills will be stronger if they often practice cutting. Cutting movements of the simplest cutouts will continue to be followed until the cutouts are more complex when the child's soft motoric skills get stronger.[4] This is evidenced by the value of the baseline-1 (A1) condition in the first session the child received a value of 87.5%, the second and third sessions of the child obtained a value of 81.25%. The child's soft motoric skills have decreased, causing the estimated tendency of direction and trace data to decrease (-). The mean level at baseline-1 (A1) is 83.3 with an upper limit of 89.9 and a lower limit of 76.7, calculating the stability tendency based on the mean level, the upper limit and lower limit to obtain a tendency to the stability of the baseline-1 condition 100%, which means the data is stable because the stability criteria used are 80-90%. In this condition, the data showed stable results with a range of 81.25-87.5%. After the data is stable, then the intervention is given to the child. If the data at baseline-1 is stable, an intervention can be implemented. However, if the data are not yet stable, the intervention conditions cannot yet be carried out. Changes in the level of this condition are negative (-) which means that the child's soft motoric skills have decreased.

M is a child with autism who has the characteristics of being late in his development, refuses when hugged, and tends to do something repeatedly, this is related to the opinion of the characteristics of children with autism who often appear during childhood include that is, (1) late development, (2) have a sense of interest in excessive objects, (3) refuse when hugged, (4) have sensory abnormalities, and (5) tend to do something repeatedly [2]

After an assessment and analysis of the child's assessment, data obtained about the child's soft motoric skills after the treatment or intervention is good. This is evidenced by the value of the ninth session of the children getting 93.75%, the tenth session of the children getting 87.5% and the eleventh session of the children getting a value of 93.75%. At baseline-2 (A2) the soft motoric ability of children with autism does not change, so that the estimated direction and traces of the data do not change (0). The mean level in this condition is 91.7 with an upper limit of 98.73 and a lower limit of 84.67 calculation of the stability tendency based on the mean

level, the upper limit and the lower limit to obtain a tendency for the stability of the baseline-1 condition of 100%, which means stable because the stability criteria used are 80-90%. In this condition, the data showed stable results in the range of 87.5-93.75%. The level change at baseline-2 is equal to (0) which means that the soft motoric abilities of the child do not change. But that does not mean there is no effect of the intervention on target behavior because it can be seen from the highest score and the lowest mean level, upper limit, the lower limit at baseline-2 (A2) conditions higher than the highest score at baseline-1 (A1).

Cutting skills influence to improve the soft motoric skills of children with autism, this is following the opinion, namely the better the soft motoric movements of children make children able to be creative, such as drawing simple pictures and coloring, scissors paper with the results of cutouts straight, use clips to join two sheets of paper, weave paper, sharpen a pencil with a pencil sharpener, and sew [10] This activity is following the characteristics of children with autism. Also, it can provide a new learning experience.

4. CONCLUSION

Based on the results of research and discussion, obtained differences in the score of children at pretest and posttest, so it can be concluded that there is an influence of cutting skills on the soft motoric skills of children with Class VIII autism at SLB Autism Laboratory UM. After the research was carried out, it was known that the effect of shearing skills on the soft motoric skills of children with autism showed an increase in the mean level.

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