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Effectiveness Of Use Peanut Balls A Therapy Tool In Improving Motor Skills In Cerebral Palsy Children

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ABSTRACT

This research aims to determine the effect of Peanut Balls in improving the motor skills of children with cerebral palsy. Cerebral palsy is a neurological condition that affects a child's motor development. Children with cerebral palsy often have difficulty controlling body movements, balance and coordination. Physical therapy and rehabilitation are important in helping to improve the child's gross motor skills. Problems with unstable body posture and balance disorders also often occur in Cerebral Palsy children. Using Peanut Balls in therapy can help improve the posture of children with cerebral palsy. The Peanut Ball provides additional support and stability when the child sits or lies on it. This helps activate core muscles, increase muscle strength, and improve balance. Therapy using Peanut Balls can also help develop movement control abilities and gross motor coordination in children with cerebral palsy. The research method used is a qualitative approach and the type of research used is case study research. The subject in this study was a 7 year old child with cerebral palsy with the initials A. The designed intervention program focused on the subject's body posture and neck control. The result when using peanut balls is that when sitting on the peanut balls the subject is able to support his body and is not stiff.

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1. INTRODUCTION

Cerebral palsy describes a group of permanent movement and posture disorders in which damage to the developing brain impairs motor control and can cause spasticity, leading to reduced strength and abnormal musculoskeletal loading, which in turn causes joint contractures and bone deformities (MacWilliams, et al. al., 2022). Physical therapy and rehabilitation are important in helping improve a child's gross motor skills. Children with Cerebral Palsy often experience limitations in their gross motor skills, such as walking, rolling over, or crawling. Impaired gross motor skills can have a negative impact on the independence and social participation of children with Cerebral Palsy. Children diagnosed with Cerebral Palsy (CP) often have limitations in their gross motor skills (MacWilliams, et al., 2022). Therefore, the search for effective and innovative therapeutic methods is very important in helping these children reach their motor potential

Intensive motor training paradigms are often given to develop the gross motor function of children with Cerebral Palsy (Burgess, A., et al. 2022). Therapy using Peanut Balls can help children with Cerebral Palsy develop their gross motor skills. Peanut Balls are used as a therapeutic tool that can provide support and stability when children interact with them. Peanut Ball Therapy can help strengthen core muscles, improve balance, and develop gross motor skills such as crawling, rolling over, or sitting steadily. The use of Peanut Balls in therapy can provide sensory stimulation thereby helping to improve the motor skills and independence of Cerebral Palsy children.

Currently, there is a lot of research discussing therapeutic tools in improving motor skills in Cerebral Palsy children. Research on the effectiveness of sensory integration therapy (vestibular input & proprioception) on gross motor function in diplegic CP children with developmental delays and spasticity (Tahir, N., Ahmed, et al., 2019). Sensory motor activities for early development: practical resources (Hong, C. S., & Rumford, H., 2020). The effect of training using a Swiss ball on static and dynamic balance in Cerebral Palsypastic sufferers (Hidayat, D.R., & Arifin, A.N. 2021). The effect of Pilates exercises on standing, walking and balance in children with diplegic cerebral palsy (Abd-Elfattah, H.M., et al 2022). Effect of use of adaptive seating equipment on grip and visual motor integration in children with hemiparetic cerebral palsy: a randomized controlled trial (Elsayed, A.M.,et al 2021).

Therefore, this study aims to determine the effectiveness of using Peanut Balls as a therapeutic tool in improving gross motor skills in Cerebral Palsy children.

2. METHODS

This research uses a qualitative approach with the type of research used is case study research. This research took place at the Special Education Laboratory of the Indonesian University of Education. Observations were carried out by conducting supervision in the interventions given to children with cerebral palsy. Before the intervention begins, the initial motor skills of children in the study will be measured using standard measurement tools, such as tests Bayley or test Gross Motor Function Measure (GMFM).

3. RESULTS AND DISCUSSION

3.1. Student Demographics

Cerebral palsy is a neuromotor disorder caused by damage to the brain which is related to the control of motor function. euismod (Kristiana, I. F., & Widayanti, C. G, 2021). The research focused on improving the movement development skills of children with cerebral palsy. The subjects in the research were children with cerebral palsy, specifically a 7-year-old child with the initials A. The initial condition of the subject was poor body posture, with a bent-over position and a predominantly turned head to the right. Gross motor skills are a child's ability to carry out activities using their large muscles. Children can do this ability to improve the quality of their movements. This is in accordance with the opinion that gross motor skills are movements that require coordination of most parts of the child's body. The ability to use large muscles or gross motor skills for children is classified as basic movement ability. According to (Arifiyanti, N et al. 2019) Basic movement abilities are divided into three categories, namely locomotor, non-locomotor, and manipulative.

3.2. Results

Peanut Balls, also known as a therapy ball or exercise ball, which is cylindrical in shape with a length greater than a regular ball, has been used as a physical therapy tool to improve gross motor skills in children, including those with cerebral palsy. The use of Peanut Balls in the therapy of children with cerebral palsy has several positive effects that contribute to improving gross motor skills. Following are some of the effects that can be achieved using Peanut Balls:

1. Improves Postural Stability
2. Increases Core Muscle Strength
3. Improves Balance and Coordination
4. Providing Sensory Stimulus

How to use peanut balls for therapy:

1. Straddle sitting
Have the child sit on top peanut ball with your feet touching and pressing the floor. The dynamic nature of peanut ball this will challenge core strength and postural control. In this position, parents can help children practice reaching for the toy in front of them, especially if the child tries to reach from the center line of the ball. You can also try playing catch if the child seems to be balancing his body and the ball well.
2. Prone walkouts
Have the child lie on his stomach on top peanut ball and place their hands on the floor in front of the ball. Place a toy or something interesting a few feet in front of the ball. Help him to balance on the ball and move his hands forward while rolling the ball to pick up the object that has been set in front of him. This exercise targets motor planning, core strength, and body stability.

3. Modified sit ups

Ask the child to sit in the middlepeanut ballwith both feet planted to one side, as if sitting on a chair, put some toys behindpeanut ball, on the right and left sides. Then, help your child hold both knees as they lean back to pick up an object from the floor and return to a sitting position. This exercise is great for general stability and core strengthening. Have the child reach for the toy on the right side with his left hand and vice versa to encourage torso rotation and more inclined strengthening.

4. Sensory regulation

Does the child seek external sensory input and appreciate strong, deep pressure? If so,peanut ballis a great tool to provide proprioceptive input for him. Ask the child to lie on his back on the mat and roll him overpeanut ballover his body in all directions to apply deep pressure. This can often help children calm down when they feel overwhelmed or dysregulated.

5. Cruising

If your child actively explores along furniture, a good way to increase the challenge is to have your child explore with their hands on a dynamic surface, such aspeanut ball. To aid play, parents can use lured or moving toys to place around the ball and have the child sail along the peanut ball to retrieve the toy and learn to perform dynamic balance strategies.

6. Quadruped position

If the child is unable to hold hands and knees independently,peanut ballis a great tool to help. To use it, place the ball under their stomach with their hands and knees on the floor. This position is beneficial for endurance and weight-bearing strength of the upper extremities. If holding the position becomes easy, parents can then practice reaching one arm overhead at a time to target posterior core strength and functional skills.

7. Modified single limb balance

Have the child stand with one foot on the floor and one foot planted on a peanut ball. Hold this position for 10-30 seconds on both sides. If this is too easy, parents can always play catch while standing in this position. Then, children can practice kicking the ball after balancing without letting their upper leg touch the floor or trying to reach beyond the support base when balancing. This exercise is a great bridge for kids who can't yet stand on one leg because it targets hip and ankle balance strategies, strength, and posture control.

The subjects in this research were children cerebral palsy with the initials A who is 7 years old. Based on the results of the GMFM assessment, an overall score of 0.392% was obtained in the gross motor aspect. The initial condition of the subject was that he had poor body posture, namely bent over like a stroller and his head was predominantly turned to the right. So an intervention program was designed to improve children's movement development skills.

The designed intervention program focused on the subject's body posture and neck control. Results when using peanut ballsis when it is seated inpeanut ballthe subject is able to support his body and is not stiff. So it can be concluded thatpeanut ballsEffectively used to improve children's gross motor skills. This increase can be explained by the fact thatpeanut ballsprovides the support and stability necessary to train and develop motor skills. The movements carried out in therapy usepeanut ballsalso provides an important sensory stimulus for children withcerebral palsy, helping them develop body awareness and movement control.

This research contributes to the scientific understanding of effectiveness peanut balls as a therapeutic tool in improving children's motor skills with cerebral palsy. The implications of these findings may form the basis for the development of broader and deeper therapeutic interventions, to improve the quality of life of children with this condition.

4. CONCLUSION

Use Peanut Balls as a therapeutic tool in improving children's gross motor skills with cerebral palsy has been proven effective. Peanut Balls provides the support and stability needed to improve posture, strengthen core muscles, improve balance and coordination, and provide important sensory stimulus. By using Peanut Balls regularly in child therapy with cerebral palsy, we can help them develop better gross motor skills, increase independence, and increase their participation in daily activities. Even though the results were positive, this study had limitations, such as a small sample size and limited study duration. Therefore, further research with a larger sample and longer duration can provide a more in-depth understanding.

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6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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