Jurnal Abdimas Cendekiawan Indonesia
Vol. 1 No. 3 September (2024)
https://doi.org/10.56134/jaci.v1i3.96

ISSN: 3046-6520 (print)
ISSN: 3046-6490 (online)

Playing Hopscotch to Develop Gross Motor Skills in School-Age Children with Moderate Intellectual Disabilities at SLB Negeri Slawi

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Abstract

Children with intellectual disabilities are unable to follow regular school programs, but they possess abilities that can be developed through education, which includes determining appropriate service programs based on the needs and conditions of children with intellectual disabilities. According to data from the 2018 Basic Health Research, the province of Central Java has 20,150 children with disabilities aged 5-17 years. A preliminary study conducted by the researcher at SLB N Slawi found that there were 307 students with disabilities. Gross motor skills involve activities or tasks that require coordination of muscles and nerves. The game of hopscotch can help children practice moving their bodies, improve agility, and enhance dexterity during play. The purpose of this research is to examine the implementation of playing hopscotch to develop gross motor skills in school-age children with moderate intellectual disabilities. This research is descriptive with a case study approach and has been reviewed through an ethical test. Data were collected through interviews, observation, physical examinations, and documentation. The TMGD (Test of Gross Motor Development) instrument and observation sheets were used. After the intervention, conducted 3 times with 30-minute sessions, the results showed effectiveness in the form of improvements in gross motor skills after each hopscotch therapy session. The TMGD instrument and observation sheets were used for measurement. Children with moderate intellectual disabilities are advised to engage in hopscotch therapy once a day for 30 minutes.

Keywords: Intellectual Disability; Gross Motor Skills; Playing; Hopscotch Play Therapy

Received: 15 June 2024 Revised: 5 September 2024 Accepted: 27 September 2024

Introduction

Children with intellectual disabilities are unable to follow regular school programs, but they possess abilities that can be developed through education, including determining appropriate service programs based on the needs and conditions of children with intellectual disabilities (Nuryati, 2022). There are three levels of services specifically designed for children with special needs: mild, moderate, and severe (Lazar, 2020). Based on certain variables (IQ level, attention, cognitive actions, development, etc.), these individuals are categorized into three fundamental groups: educable (mild level), trainable (moderate level), and those with severe intellectual disabilities. These individuals can also be grouped according to the different types of intellectual disabilities (Rohman et al., 2023).

Research results Ministry of Health in 2013 indicate that individuals with intellectual disabilities, specifically those with intellectual disabilities over the age of 15, make up 12.7% of the population in West Java (Kemenkes, 2013). Based on this data, there has been an increase in the number of individuals with intellectual disabilities in West Java (Purbasari, 2020). According to the 2018 Basic Health Research, the province of Central Java has 20,150 children with disabilities aged 5-17 years (Indriyani et al., 2021). Results from the BP-DIKSUS (2013) show that in Tegal Regency, there are 274 children with intellectual disabilities (Hidayat et al., 2021). A preliminary study conducted by the researcher at SLB N Slawi found that there are 307 students with disabilities, divided into two types: CI type and C type. This classification is based on the level of intellectual disability, where children with mild intellectual disabilities are placed in the CI class, while those with moderate and severe intellectual disabilities are in the C class. From the author's observations in one class, there were 12 children aged 7-9 years, the majority of whom could only count from 1 to 10.

Children with intellectual disabilities experience delays in motor development, making it difficult for them to perform movements such as walking or running (Puspita et al., 2018). Developing motor skills is crucial for improving the quality of movement (Puspita et al., 2018). Special training and guidance are needed for children with intellectual

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disabilities to address challenges in areas such as sensorimotor skills, body balance, environmental awareness, coordination, physical mobility, sensorimotor integration, physical dexterity, a sense of aesthetics, and cleanliness (Fotiadou et al., 2017). These challenges must be addressed through targeted training programs to meet their physical needs (Asis, 2015). Gross motor skills involve activities that coordinate muscles and nerves (H. Rizki & Aguss, 2020). Gross motor skills refer to activities that use the arm, leg, or wholebody muscles and overall body balance (Wati & Widajati, 2018).

Play is a way for children to learn about their environment and is a fundamental need, especially for young children (Zaini, 2015; Pratiwi, 2017a; Sit, 2021; Pahrul, 2021). Through play, children can fulfill all aspects of their cognitive, emotional, social, motor, and language development (Putro, 2016; Rahma, 2017; Hayati & Putro, 2021). Play has important value for a child's physical, cognitive, language, and social development (Rozana et al., 2020; Ali et al., 2022). It can also stimulate creativity, trigger brain stimulation, manage conflicts, develop empathy, sharpen the senses, provide therapy, and encourage exploration (Pratiwi, 2017b; Nurani et al., 2020; Rozana & Bantali, 2020). In the game of hopscotch, once a stone is thrown into a square drawn on the ground or pavement, the child hops over the square containing the stone, moving from one square to the next on one foot, then turning back to retrieve the stone (Kayvan, 2009). This game can train children to move their bodies, improve their agility and dexterity, and engage actively in motor skill development through joyful play (Muslimah, 2018). Hopscotch involves jumping from one square to another after throwing a stone into the square, which fosters a positive self-concept regarding social and emotional healing (Laely & Yudi, 2018; Welsh, 2017; Desmariani, 2020). Through this therapy, children can explore experiences similar to their own but in a different version, staying in control, and it is generally used to alleviate the negative effects of hospitalization, such as stress, depression, and anxiety (Admin, 2023). Based on this background, the author feels it is important to address the issue of children with intellectual disabilities in the study titled "The Implementation of Playing Hopscotch to Develop Gross Motor Skills in School-Age Children with Moderate Intellectual Disabilities at SLB N Slawi.

Method

This research uses descriptive analytical methods with a case study approach. The subjects of the study are two school-aged children who received hopscotch therapy interventions to develop gross motor skills in children with intellectual disabilities. The research instruments used are the TMGD (Test of Gross Motor Development) and observation sheets. The inclusion criteria for the study sample are children with intellectual disabilities aged 7-12 years, cooperative respondents, willing respondents, and children with moderate intellectual disabilities. The exclusion criteria are children who refuse to participate and children with speech impairments. The research was conducted by providing hopscotch therapy for 30 minutes, using a hopscotch mat and a marker (gaco), for 3 consecutive days.

Results and Discussion

In this scientific paper, the researcher conducted hopscotch therapy to develop gross motor skills. Children with intellectual disabilities experience developmental delays, particularly in walking and running. Developing motor skills is a crucial aspect of enhancing movement quality. Children with intellectual disabilities require special training and guidance. Therefore, the researcher provided hopscotch therapy to develop and train the children’s agility in movement.

For clients 1 and 2, hopscotch therapy was implemented by explaining and demonstrating the correct way to play hopscotch. In children with moderate intellectual disabilities, the therapy sessions were conducted for 1 session of 30 minutes over 3 consecutive days to improve gross motor skills at SLB N Slawi. The researcher managed these sessions in the fifth-grade class with 2 clients during 3 meetings, each lasting between 15 to 30 minutes. The tools used by the researcher during the implementation were the hopscotch mat and the marker (gaco). Before starting the hopscotch game, the clients were explained the rules of the game and demonstrated how to play it slowly and in detail. After the explanation and demonstration, the researcher observed the clients while they played, providing assessments on the gross motor skills test using the instrument sheets and documentation.

On the first day of implementation, hopscotch therapy was conducted for clients 1 and 2. For client 1, the session took place on June 10, 2024, at 08:00 WIB, lasting 30 minutes. This session resulted in an improvement in the client’s gross

motor skills, as they were able to bend their legs but only to an angle of 45 degrees. When throwing the gaco, the client was able to aim it forward but could not land it in the square; they simply released the gaco from their hand. Their fingers opened upon throwing, but the throw did not reach the target. In terms of balance, the client could not stand on one foot.

For client 1, in three aspects (hopping, throwing, and balance), the aspect that had not yet developed was balance. The client was afraid of falling while trying to balance on one foot after hopping. Therefore, the researcher had to reassure the client by holding their arm to encourage them to jump. For client 2, the session also took place on June 10, 2024, at 08:00 WIB. During this session, lasting 30 minutes, the client showed improvements in gross motor skills but could not bend their legs. The client was able to hop and aimed the gaco forward, but it did not land in the square. When throwing, their fingers opened but did not aim correctly, and they could not balance on one foot or stand on two feet after hopping. For client 2, in three aspects (hopping, throwing, and balance), the aspect they could not attempt on the first day was hopping on one foot. This difficulty was influenced by the client's low IQ, which made it hard for them to quickly understand the game and maintain concentration due to distractions in the environment.

Figure 1. Community service activities by Its Nur Itsna, Jumrotun Ni'mah and Siti Amalia

On the second day of implementation, conducted on June 11, 2024, for client 1 at 08:00 WIB, lasting 30 minutes, the client was able to bend their legs to a 90-degree angle but only for a few seconds. When throwing the gaco, they aimed it forward, and the gaco landed precisely in the square, with fingers opening toward the target. In terms of balance, the client could hop on one foot but only for a few seconds before falling. In the aspect of balance, client 1 showed some improvement, but continuous practice was still needed to achieve optimal results.

For client 2, they could bend their legs to a 45-degree angle, aimed the gaco forward, and it landed inside the square. In terms of balance, the client was able to hop on one foot but fell. There was some progress in client 2's ability to hop on one foot on the second day, but they needed to train more intensively to achieve similar results as client 1. The client still struggled to concentrate on the game, prompting the researcher to initiate the implementation for the third day in the classroom.

Figure 2. Community service activities by Anisa Ontiawati

On the third day of implementation, conducted on June 12, 2024, at 08:00, client 1 could bend to a 90-degree angle. When throwing the gaco, they aimed it forward, and it landed precisely inside the square, with fingers opening toward the target. In terms of balance, client 1 was able to hop on one foot and maintain balance throughout the game. On the third day, client 1 successfully maintained balance during the game. For client 2, they could bend their legs to a 90-degree angle, aimed the gaco forward, and their fingers opened toward the target, resulting in the gaco landing accurately in the square. In terms of balance, client 2 was able to hop on one foot and sustain balance throughout the game. Additionally, client 2 showed excellent progress in their ability to hop, successfully bending to a 90-degree angle, and maintained concentration during the game.

The results of the research conducted by the researcher regarding the implementation of hopscotch therapy for school-aged children with moderate intellectual disabilities, carried out from June 10 to June 12, 2024, with 2 respondents attending 3 sessions each lasting 30 minutes, using the TMGD (Test of Gross Motor Skills) at SLB Negeri Slawi, showed a significant positive impact on the improvement of gross motor skills in these children. The tools used included 2 markers (gaco) and 2 hopscotch mats, which contained colors, images, and numbers 1-10 within the squares. This setup allowed for enhancing memory and improving counting fluency during play.

Based on the evaluation of Subject I, there was a development in gross motor skill aspects for each day over the 3 sessions following the hopscotch therapy. On the first day, Client 1 was still adapting to the hopscotch therapy and had not yet developed (BB). By the second day, the client showed improvement in every aspect of ability and was developing as expected (BSH). By the third day, the client had understood how to play and was active during the game, indicating very good development (BSB).

Based on the evaluation of Subject II, there was development in the aspects of gross motor skills for each day during the 3 sessions following the hopscotch therapy for the second client, An. S. On the first day, similar to An. A, An. S still needed adaptation or a better understanding; the researcher needed to explain slowly and repeat the instructions to achieve optimal results. By the second day, the client showed improvement in every aspect of ability and was developing as expected (BSH). On the third day, the client had understood how to play and was active during the game, indicating very good development (BSB).

Intellectual disabilities, or tunagrahita, refer to children who are unable to participate in regular school programs but possess abilities that can be developed through education, which includes determining service programs that are appropriate for the needs and conditions of children with intellectual disabilities (Couper et al., 2019; Arriani et al., 2022; Wahyuni & Muliati, 2022). Services specifically designed for children with special needs are categorized into three levels: mild, moderate, and severe. Children with intellectual disabilities can be classified based on their type or characteristics, such as Down syndrome, which has distinctive facial features, slanted eyes, a thick and protruding tongue, short fingers and toes, dry, thick, and coarse skin, and poor dental structure (Kamil & Sope, 2023; Nareza, 2024; Novak, 2024; Oktaviani, 2010). Hydrocephalus is characterized by an enlarged head filled with fluid, while microcephaly is indicated by an abnormally small head size (Duy et al., 2024). Gross motor skills refer to activities or movements that involve the coordination of muscles and nerves (I. A. Rizki, 2020). Gross motor skills can be defined as activities that utilize the muscles of the arms, legs, and the entire body or parts of the body, as well as maintaining overall body balance (Hasanah, 2016).

Hopscotch is a game where players jump from one square to another after throwing a stone into a square previously drawn on the ground or pavement (Daniswari, 2022; Kumparan, 2021; Hatma, 2024). After throwing the stone into the square, children navigate over the squares containing the stones they threw earlier, hopping on one foot from one square to the next and turning back to retrieve the stones (Wikibuku, 2023; Wikipedia, 2024). Playing hopscotch can train children's ability to move their bodies, enhancing their agility and dexterity during the game (Adpriyadi, 2017; Novita, 2022; Tgrcampaign, 2019). Additionally, children will appear more active in learning and developing their physical motor skills by engaging in this enjoyable activity (Herdini & Darmayanti, 2024).

The results of this study are also supported by Bintari (2013) research, which states that hopscotch games for children with intellectual disabilities require significant development of gross motor skills across various aspects, including health, enabling these children to develop optimally, similar to typically developing children. The researcher utilized hopscotch therapy, which has been proven to enhance gross motor skills. This study demonstrates that playing hopscotch can train the gross motor skills of children with moderate intellectual disabilities, allowing them to walk with movements both outside and within the drawn squares, hop on one foot and two feet, throw objects, and run while carrying items.

The researcher assumes that the development of gross motor skills in children is influenced by the enjoyment they derive from playing hopscotch. Through this traditional game, children can enhance their physical abilities, as hopscotch requires them to jump, throw, and maintain balance, honing their social skills with peers and fostering a sense of togetherness while adhering to mutually agreed-upon game rules. There is a significant relationship between the development of gross motor skills and hopscotch therapy for school-aged children with moderate intellectual disabilities at the SLB Negeri Slawi, who have experienced growth and development challenges from an early age. The findings of this study are expected to serve as a reference for nurses, teachers, and families in developing gross motor skills through hopscotch and to expand the types of games available at SLB N Slawi as a means of play and learning for children in both school and extracurricular environments.

It is recommended that this research can enhance the skills, experience, and knowledge of researchers in conducting scientific studies, particularly regarding the implementation of hopscotch games to develop gross motor skills in children with moderate intellectual disabilities. The findings of this study may serve as a reference or comparison for future research endeavors.

Conclusions

Theory on Hopscotch Therapy for Developing Gross Motor Skills in School-Aged Children with Moderate Intellectual Disabilities The hopscotch game can enhance gross motor skills in children with intellectual disabilities because these children experience challenges in their motor development. Therefore, this game is very beneficial for training children’s ability to move their bodies, as well as improving their agility and coordination during play. Implementation of Hopscotch Therapy for Developing Gross Motor Skills in School-Aged Children with Moderate Intellectual Disabilities The implementation of hopscotch therapy aims to develop gross motor skills in school-aged children with moderate intellectual disabilities. Results of Implementing Hopscotch Therapy for Developing Gross Motor Skills in School-Aged Children with Moderate Intellectual Disabilities The results of the hopscotch therapy implementation

conducted with both clients showed a positive impact on their gross motor skills. The children were able to recognize the numbers displayed on the hopscotch carpet, and the therapy also encouraged them to interact with their peers.

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