International Journal of Physical Education, Sports and Health 2023; 10(2): 211-214

P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (RJIF): 5.38
IJPESH 2023; 10(2): 211-214

www.kheljournal.com
Received: 01-12-2022
Accepted: 05-01-2023

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Effect of water game model on gross motor improvement of deaf children in SLB N Mesuji Lampung

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Abstract
This study aims to determine the effect of water games on the gross motor improvement of deaf children. This type of research is an experiment with the design of one group pre-test and post-test. The population in this study was 24 children of SLB N Mesuji Lampung. The sample in this study was 10 people taken using purposive sampling techniques. The instruments used are to measure gross motor using (1) a test of walking on a straight line for 5 meters, (2) a running test avoiding five obstacles for 15 meters, (3) a test of standing on one foot for 10 seconds, (4) a test of jumping from the top of a beam 15 cm high, (5) a test of jumping from a beam 15 cm high. The data analysis technique used is the paired sample t-test. The results showed that there was a significant influence of the water game model on the gross motor improvement of deaf children from the initial test and the final test, an increase with a difference of 2.2, namely from an average score of 9.1 in the pre-test to 11.3 in the post-test, and strengthened by the results of the t-test using a paired sample t-test with a t value of -2.516 and a p significance value of 0.033 < 0.05. This study concludes that there is a significant influence of water games on the gross motor improvement of deaf children of SLBN Mesuji Lampung.

Keywords: Water games, gross motor, deaf children

1. Introduction
In developing and improving the quality of human resources, educational services play an important role. The success of educational services is determined by providing quality services to the users of these educational services (students, stakeholders, and the community). In educational institutions, the factor that determines the success of educational goals is the teacher [1, 2]. The role of teachers in the innovation and development of learning models is very necessary considering that teachers can be said to be players who play a very important role in the teaching and learning process in the classroom, and should be able to process their ability to create effective and efficient learning models. A good learning model can not only be implemented in ordinary schools or regular schools.

Extraordinary schools (SLB) also have learning models and methods for their students. The learning model is the main foundation of school success, especially for students [3]. SLB is a school that contains special children or extraordinary children who certainly have differences from normal children in general. Children in exceptional schools cannot be confused with normal children in general, who have to do their learning. These amazing children need appropriate and targeted learning methods [4, 5].

Classroom learning will be effective when teachers and students can work well together, and teachers can choose the right learning model for students. Students will easily and unstoppable follow the learning in the classroom when the teacher can attract the attention of students and use the learning model preferred by the learners. This learning model will not be separated from the existence of learning media that can help in teaching. When media and learning tools are well available, they can help the learning process effectively.

Of the various types of children with special needs, Deaf is one type of child limitation that also really needs to be considered. Deafness can be interpreted as the condition of an individual who experiences damage to the sense of hearing that causes not being able to

capture various excitatory sounds, or other excitatory hearing [6, 7]. In addition, the most prominent thing is that deaf children have impaired body balance so physical activity in deaf children tends to be simpler. In general, every activity of human life is inseparable from motion. Humans perform motion activities, be it rough motion (gross motor) or fine motion (fine motor) according to the student's ability. The most ideal learning of basic movements occurs in the children's phase. Having good gross motor skills for children with special needs is very important to support the movement of children in making movements into a coordinated, controlled, and regular response. The gross motor in children needs to be trained because, at an early age, this motor ability is the beginning of the development of other abilities, such as sensory abilities and thinking abilities.

Based on the results of observations and preliminary interviews with 10 teachers at SLB N Mesuji conducted on January 10, 2023, it was revealed that the average gross motor ability of deaf children is still low. This is caused by the learning model used by these teachers is a classical learning model, so the results are still less effective in improving children's gross motor skills at SLB N Mesuji. The material provided by the health assessment teacher is still in the form of giving techniques such as jumping and jumping well, throwing and catching the ball, and maintaining balance when climbing the board, not yet in the form of playing fun. Related to the reality that occurs on the field and monotonous play activities, there is a new play activity that is more fun for children. And such play activities are very rarely found by children.

Based on observations, the motor skills of children with special needs are also still less than optimal with students tending to move arbitrarily and paying less attention, and not following the movements instructed by the teacher so 30 students do not meet the KKM score. The standard value of KKM in SLB N Mesuji is worth 80. Teachers at SLB N Mesuji have difficulty finding references that can help find the right game modifications and learning models for teaching, and the lack of teaching facilities and infrastructure is a consideration for teachers who cannot make modifications and variations in teaching. In addition to the difficulty of finding references, another thing is because SLB N Mesuji is an extraordinary school that was only established in 2017 and was affected by the pandemic which requires learning to be carried out in a limited manner, so the experience of educators and education staff is still lacking. Children aged 5-6 years who were sampled in this study were children with special needs who could not go to school in public kindergarten schools so they entered (SLB).

Results of previous research conducted by [8] state that in reality, deaf children in the process of movement students prefer to be silent, closed, lazy to move, and tend to be passive when doing group games. This is because the lack of hearing present in it causes the games given not to vary since not all games for normal children can be directly given to deaf children. This is very bad for the development of motion as well as gross motor skills.

Therefore, deaf children through education in SLB need a learning model that can form self-confidence and lead students to the same human beings as humans in general and can bathe students later in life in society. In physical education learning, a game can be carried out that can improve the learning objectives to be achieved [9, 10]. For this reason, researchers want to know the influence of game-based learning models to perfect the learning model that lectures and only use available means do not have the creativity to modify sports equipment that is more varied in use related to the type of learning activity.

From the process of analyzing some of the results of previous studies, to improve learning outcomes and to improve the skills of deaf children, a game-based learning model is needed. Remembering the importance of motor activities to train the motor skills of deaf children [11, 12]. The opinion of most SLB teachers does require a game-based motor learning strategy, and some of them support the development of a game-based motor learning model.

A form of play activity that can improve gross motor skills should contain activities such as running, walking, or jumping that require large muscles. Games are one of the means of improving children's gross motor skills. A game is a tool used by children to explore and search for new information that they child does not find in the absence of a game [13].

One of the games that can improve children's gross motor is to play aquatic / water. The aquatic material contains activities carried out in the swimming pool, such as; water games, swimming styles, safety in the water, and the development of relevant aspects of knowledge and the values contained therein. In addition, the provision of learning with innovative, interesting, and fun methods also affects students' understanding of the learning material [14].

Stimulation of growth and development in children aged 5-6 years is carried out through games that give the child the opportunity to move freely. The concept of developing basic movement-based learning in water games is to use water as a tool in the game process. Water is used as a good medium in stimulating a child's development in building confidence, motor skills, hand-eye coordination, and improving fitness.

One of the modifications of gross motor learning for deaf children is to develop water games using a water game model [15, 16]. The water game model to improve the gross motor skills of deaf children is expected to be a teaching material for teachers in the learning process. The water game model for physical education learning has been adapted to the developmental stage of deaf children in elementary school. This model was created because it trains the motor skills of deaf children. Based on the description of the previous problem, the purpose of this study was to determine the influence of the water game method on improving the gross motor skills of deaf children of SLB N Mesuji Lampung.

2. Materials and Methods

This study used an experimental research model with a one-group pre–test post–test design. This method is validation, which is to test the influence of one variable on another. This experimental study used one group that received the same treatment, namely the provision of water games. The population in this study was 24 people, and the sample in this study was 10 people. Sampling technique using a purposive sampling technique. This research has received approval from all samples that have filled out a statement of ability to become a research sample and have met the requirements of the research code of ethics. Data collection techniques in this study are tests and measurements. The instruments used are to measure gross motor using (1) a test of walking on a straight line for 5 meters, (2) a running test avoiding five obstacles for 15 meters, (3) a test of standing on one foot for 10 seconds, (4) a test of jumping from the top of a beam 15 cm high, (5) a test of jumping from a beam 15 cm high. After that, treatment or exercise was given as many as 16 meetings with a frequency of 3 times a week. And ended with taking the final

test or post-test to measure the gross motor skills of deaf children to know the difference in gross motor scores in early childhood after treatment. The data analysis technique used in this study using SPSS 22 was to use a paired sample t-test. at the significance level α= 0.05. Before arriving at the use of paired sample t-test, it is necessary to carry out prerequisite tests, which include: (1) a normality test and (2) a hypothesis test with paired sample t-test.

3. Results & Discussion

The research results and discussion section will be presented sequentially, including data on the results of the research pre-test and post-test, prerequisite test, and hypothesis test. The hypothesis test in this study will be presented according to the formulation of the problem, namely: (a) The effect of water games on the gross motor improvement of deaf children. In full it will be presented as follows.

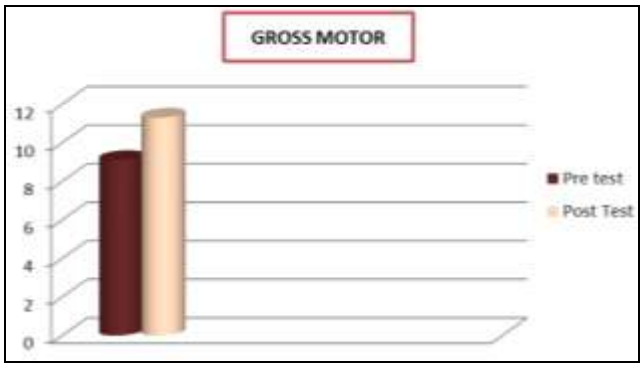

Fig 1: Pre-test and post-test bar charts of gross motor skills of deaf children.

Based on Figure 1 above, shows that the gross motor of deaf children average 9.1 worth of the pretest and increases at the time of the posttest worth 11.3.

3.1 Prerequisite Test Results

a. Normality Test

The data normality test in this study used the Shapiro-Wilk method. The results of the data normality test conducted in each analysis group were carried out with the SPSS version 22.0 for windows software program with a significance level of 5% or 0.05. The summary is presented in Table 1 as follows.

Table 1. Summary of Normality Test Results

Group	P	Significance	Information
Gross Motor Pre test	0,643	0,05	Usual
Post Gross Motor Test	0,090	0,05	Usual

Based on the statistical analysis of normality tests that have been carried out using the Shapiro-Wilk test, all gross motor pretest and posttest data of deaf children were obtained from the normality test results of the data of significant value p > 0.05, which means that the data are normally distributed.

3.2 Hypothesis Test Results

Research hypothesis testing is carried out based on the results of data analysis and interpretation of paired sample t-test analysis. The results of hypothesis testing are adjusted to the previously formulated hypothesis, as follows: "The hypothesis is that there is an influence of water games on the gross motor improvement of deaf children" Based on the results of the analysis, the data obtained in Table 3 are as follows.

Table 2: Results of paired sample t-test water games on the gross motor improvement of deaf children.

Paired Samples Test					
		Paired Differences	t	Df	Sig. (2-tailed)
		95% Confidence Interval of the Difference			
		Upper			
Pair 1	Pre-test Gross Motor - Post-test Gross Motor	-.16136	-2.516	9	.033

From the results of the paired sample t-test test Table 2 above, it can be seen that the significance value of p is 0.033 and the value of t is -2.516 Because the significance value of p is 0.033 < 0.05, it means that H0 is rejected. Thus there is a significant influence of water games on the gross motor enhancement of deaf children. This means that the research hypothesis that states that "There is a significant influence of water games on the gross motor improvement of children Deaf ", has been proven.

4. Discussion

The discussion of the results of this study provides a further interpretation of the results of the data analysis that has been put forward. Based on hypothesis testing produces an analysis, namely: (1) there is a meaningful influence of the main factors of the study. The discussion of the results of the analysis can be explained further as follows:

"There is an influence of the water play model on the gross motor improvement of deaf children"

Based on the results of the analysis carried out, it was found that the gross motor skills of deaf children experienced a good improvement by being given training using the water game model. These results are supported by previous research conducted by [17] states that aquatic activity can develop gross motor in early childhood. Other research data conducted by [18] revealed that there was a significant influence of aquatic activity on the gross motor abilities of high-end mildly impaired children. Aquatic activity affects the gross motor abilities of children because, in the process of implementing aquatic activities, there are basic elements of the motor ability component. Research results [19] prove that water exercise programs are effective in improving gross motor skills in children with special needs.

Research results [20] prove that the water program can increase muscle strength in autistic children. Aquatic activities are activities carried out in the water that aims to train children to obtain the advancement of gross motor, cognition, affection, and social potential [21, 22]. Aquatic activities or water media can provide a unique and fun atmosphere for all children who experience limitations, one of which is deaf. The purpose of water games is to bring out their courage in carrying out activities in the water, provide enrichment of movement for them especially their gross motor abilities, and be able to reduce psychic, physical, and social disturbances or deviations [23]. The water game model to improve the gross motor skills of deaf children is expected to be a teaching material for teachers in the learning process. The water game model for physical education learning has been adapted to the developmental stage of deaf children in elementary school.

5. Conclusions

Based on the results of the research and the results of the data analysis that has been carried out, the following conclusions are obtained. There is a significant influence of water games on the gross motor improvement of deaf children. The results showed that the water game method is an effective method used for deaf children. The results of the study imply that improving the gross motor skills of deaf children can be done by striving for the application of a water game model. This means that children are given a play model that is by their characteristics so that in the learning process children feel happy and motivated to follow the learning process so that learning objectives will be achieved. Then another implication is to encourage teachers to apply suitable learning models that can trigger children's gross motor movements in learning.

6. Acknowledgments

This research article can be carried out well thanks to the help of various parties, therefore the researchers express their deepest gratitude to all levels of lecturers at the faculty of sports science, Yogyakarta State University.

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