NUTRITIONAL STATUS EFFECT ON OBJECT CONTROL ABILITY IN CHILDREN AGE 5 TO 6 YEAR

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Article Info	Abstract
	Low basic mobility skills in children aged 5 to 6 years in the 2x11 Kayu Tanam sub-district are difficult. Whereas this basic movement skill is the initial foundation in realizing more complex movements in the future, such as physical activity and more specific sports activities. Basic motion skills are divided into two, the ability of object control and locomotor. One aspect that supports basic movement skills is nutritional status. This study aims to determine the effect of nutritional status on the ability of object control children aged 5 to 6 years in 2x11 Kayu Tanam District. The research method used is simple linear regression. The population in this study were children aged 5 to 6 years and samples were taken by random sampling with a total of 83 children. Nutrition status data is obtained through height and weight measurements and the ability of the control object using the TGMD-2 instrument. The results showed that there was an influence of nutritional status on the ability of object control children aged 5 to 5 years in 2x11 Kayu Tanam District with sig $0{,}000 < \alpha = 0.05$ and the effect of 24.3%.

INTRODUCTION

Early age is a golden age in growth and development in children. It is also said that ages 3 to 7 years are golden age in thestages of development fundamentalof motor skills in children (Gallahue, Ozmun, & Goodway, 2019). Therefore directing and guiding children by building positive character in children and balancing all aspects of their development so that they can develop according to their age. The aspect of motor development is one aspect of development that can integrate with the development of other aspects. Basic motion skills are the ability of motion used as a basis for competition (Clark & Metcalfe in Bakhtiar et.al, 2019). Basic mobility skills are developed during childhood and then as they grow older they continue to be refined more specifically for the stability of mastery in the sport they are engaged in in the future (Clark; 2005 in Engel et al; 2018). Also explained by that basic motion skills are very important to learn so that children do not experience movement delays in the future (in Bakhtiar, 2014).

Fundamental motor skillsmotor skills or basicare considered as basic ingredients of more complex and specialized motor skills, which are needed for the success of children's participation in many daily activities such as: social activities, sports, and skills (Gallahue, Ozmun, & Goodway, 2011; Sugden & Wade, 2013; Valtr, Psotta, & Abdollahipour, 2016; in Kokštejn et al, 2017). Syahrial and Famelia asserted that the basic mobility abilities possessed by children are basically divided into 2 large groups, namely object control and locomotor (Stodden et al., 2008; Jakub, Martin & Petr, 2017; in Syahrial et al, 2019). The ability of the control object is the ability of motion controlled by a child by using the object as its medium. Because the implementation of this movement will require the tools or media used to help train the ability of movement in children. This control object ability consists of several examples of movements, including throwing, catching and kicking (Gallahue et al in Bakhtiar, et al, 2014). It's involves dexterity to manipulate the movements of objects with large and small sizes. The basic movement abilities possessed by a child can develop through a combination of active play and training programs that are designed in such a way. Their abilities are also influenced by many factors, including biological, psychological, social, motivational and cognitive aspects of the child (Branta and Seefeldt; 1983 in Engel et al; 2018). Therefore, an assessment of a child's motor skills competency must be carried out very carefully to ensure that the development of these abilities is as it should be especially in the first 10 years of their early life.

Maintenance of nutritional capacity will have an impact on the high and low IQ of a person (Martorell, 1998; in Oommen, 2014) such as iron deficiency, folate, iodine B12 and protein deficiency (Qian et al, 2005; Saloojee and Pettifor, 2000; Schoenthaler et al 2000; Politt et al 1993; Stein et al 2005 in Oommen, 2014). Therefore, in the early stages of pregnancy until the initial growth period of a child, it is very important to consider the nutrition kisses that he consumes because it will affect the structure of the brain size, behavior and intelligence he has. Early age children are very susceptible to nutritional deficits and micronutrient deficiency inadequate or inappropriate eating patterns cause malnutrition. During the growth period the body needs a lot of nutrients to support the growth process, nutritional deficiencies experienced in childhood masses will be very detrimental to the child and make them vulnerable to growth retardation, scholastic retardation and

reduced body work capacity, such as kemampuangerak and organ systems (Shivaprakash and Joseph; 2014 in Dey and Nath; 2017). Nutritional status is an important index to measure quality of life especially in the mass of children. Understanding the nutritional status of children is the first step to improve the quality of growth and their development in the future in the future and the growth and development of humanity towards the better (World Health Organization, 1999 and Anurag and Payal et al 2012 in Dey and Nath; 2017; 2017). Nutrition plays an important role, because inadequate nutrition during childhood can cause malnutrition, growth retardation, reduced work capacity and poor mental health and also poor social development (Awasthi and Kumar; 1999 in Manna et al; 2011). Based on the fact that the researchers obtained in the field after doing some training in order to improve the quality of early childhood movement of PAUD and kindergarten teachers in several areas in West Sumatra, such as South Coast, Padang Panjang, Pariaman and Padang Pariaman, then the researchers knew that so far there had never been training and seminars related to this are held. So PAUD / Kindergarten teachers and parents don't even know that mastering basic movement skills is as important as honing a child's cognitive abilities. The results of the study state that there is a correlation between basic movement skills and children's cognitive abilities (Korbecki et.al, 2017).

Even though the training and seminars are very beneficial to improve the quality and quantity of early childhood and kindergarten students' movements that are fostered. Through this training researchers can also see the great interest of the teachers. Much of this training is based on the basic theory that basic motion skills must indeed be taught at an early age because otherwise it will inhibit various physical activities in the future (Pangrazi, 2007). However, there are still many children with limited mobility. Bkahtiar said that this evil was also caused by the Indonesian people's lack of understanding about this discipline (Bakhtiar, 2014). This is because these children lack the opportunity and ability to move actively (Famelia, Goodway, Bakhtiar & Mardela, 2016).

METHODS

Methodology

This study involves as many as 83 participants aged 5 to 6 years consists of 49 girls and 34 boys in the District 2x11 Wood Plant. The selected participant characteristics are children who have no disabilities in moving and their parents work as housewives.

Nutritional status

Data on children nutritional status is obtained through measurements of the child's height and weight. The child's height is written in meters (m) and the child's weight is written in kilograms (Kg) which is then processed using the BMI formula or Body Mass Index to get a classification of nutritional status.

Object Control Ability

Object control ability's measured by Test of Gross Motor Development 2 Edition (TGMD-2) instrument consisting of 6 skills or abilities measured, namely: striking astationary ball (hitting the ball), stationary dribble (drible), catch, kick, underhand roll (roll the ball), overhand throw (throw from above).

Children are asked to do 3 repetitions for each skill assessed. All movements displayed by children are recorded using a camera to do the value coding. Each skill contains approximately 3 to 5 indicators that are the assessment target. Every

movement that matches the assessment indicator will be given a value of 1, if it is not suitable will be given a value of 0. All values will later be combined to get the final result that will be converted into a percentile score.

Research Procedure

Research on the nutritional status and ability of this control object can be done indoors or outdoors with the condition that the room or field used meets the requirements. In collecting data, researchers were assisted by 4 research assistants. This research takes about 10 to 15 minutes to complete the test for each child.

Data Analysis

Data collected then analyzed using SPSS 23 with a significance level <0.05. Before conducting a hypothesis test, the researcher first tests the analysis requirements to ensure the data meets classical assumptions.

RESULTS AND DISCUSSION

Results

The following is a nutritional status description variable data and the ability of the kindergarten students' control objects in the 2x11 Kayutanam District.
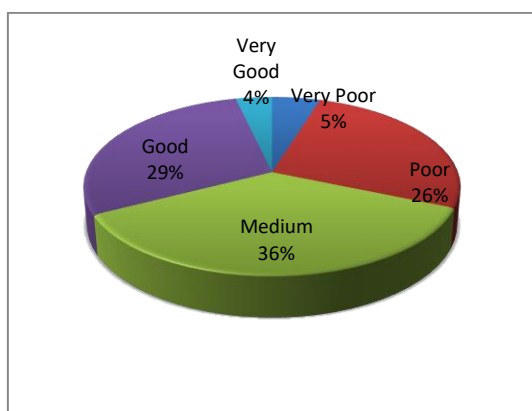

Figure 1. Histogram of nutritional status

Based on diagram above, it can be seen that as many as 4 children aged 5 to 6 years or 5% in the classification of "Very Poor". A total of 22 children aged 5 to 6 years or 26% in the classification of "Poor". As many as 30 children aged 5 to 6 years or 36% with the classification "Medium". A total of 24 children aged 5 to 6 years or 29% with the classification "Good". In the classification of "Very Good" there are 3 children aged 5 to 6 years or 4%.

Table 1. Ability of control objects of female students

N	Female		
	Percentile Rank	Relative Frequency	%
	<1	40	82%
49	1	1	2%
	2	4	8%
	3	4	8%

Based on her data above, from 49 girls aged 5 to 6 years in Kayu Planted for object control data as many as 40 children (97%) are in the percentile rank <1. While in percentile rank 1 there are 1 child (2%) and in percentile rank 2 there are 4 children (8%). Furthermore, in percentile rank 3 there are 4 children (8%). Whereas for locomotor data there are 49 (100%) children in the percentile rank <1. In the percentile rank 1 and 2. Likewise the percentile rank 3 which shows that there are not even one child.

Table 2. Control object ability of male students

N	Male		
	Percentile Rank	Relative Frequency	%
	<1	33	97%
34	1	0	0%
	2	0	0%
	3	1	3%

Based on the data above, from 34 boys aged 5 to 6 years in Kayu Tanam for object control data as many as 33 children (97%) are in the percentile rank <1. While in percentile rank 1 and 2 there is not even one child. Furthermore, in percentile rank 3 there is 1 child (3%). Whereas for locomotor data, there were 30 (88%) children in the percentile rank <1. In percentile rank 1 there are 1 child (3%) and 3 children (9%) in percentile rank 2. While in percentile rank 3 there is not even one child.

Hypothesis testing results of the influence of nutritional status on the ability of the control object obtained r $_{count}$ value is 0.493 with a sig value of 0.000 $<\alpha = 0.05$, in this case Ha is accepted and H0 is rejected, which means that there is an influence of nutritional status on the ability of the control object. Nutritional status has an effect of 24.3% on the ability of kindergarten students' control objects, the remaining 75.7% is influenced by other variables.

Discussion

Fundamental motor skills or basic movement abilities or are skills which in practice involve large muscle parts, leg and arm muscle strength in order to achieve the goals of motion, such as throwing, jumping, jumping and others. This movement is used as a basis for strengthening sports skills (Bakhtiar in Bakhtiar et al, 2019). The development of fundamental motor skills occurs through an interactive process of individual aspects and the environment. These aspects are; biological and demographic factors, behavioral and skill attributes, cognitive, emotional and psychological factors, cultural and social factors and environmental factors (Barnet et al, 2016).

The results of previous studies write that the *fundamental of this motor skill* develops at an early age, around 3 to 7 years (Gallahue, Ozmun, & Goodway, 2019). This age is also known as the *golden agegolden age* or theof children's growth and development. At this age the attention of the family is needed by children to be able to express themselves. A high level of curiosity makes children more active in their movements and mimics what they see. For example, children imitate how to say something, learn to shake hands and will also mimic movements performed by others such as running, throwing, catching and supporting objects.

Fundamental motor physical skills or children basic abilities must always be sharpened by providing movement exercises that will be stored by children in their long-term memory as a form of motion experience and will be reused continuously throughout their lives. It is important to remember that, these fundamental motor skills will not develop in line with age, fundamental motor skills will only develop if given training (Pang & Fong, 2009 in Bolger et al, 2018). Many elements that need to be considered in increasing the basic mobility abilities are physical elements possessed by children. Based on agility research, coordination and balance directly affect basic movement skills, (Oktarifaldi et al, 2019). Therefore it is necessary to do exercises and appropriate methods in the implementation of learning motion. A lot of exercise should also be balanced with the fulfillment of nutrition in children. Nutritional status influences the basic movement skills especially the ability of child control objects. Research that has been conducted by researchers has found that there is an effect of 24.3% given by nutritional status on the basic mobility displayed by children aged 5 to 6 years in

Kayu Tanam. Seeing the considerable influence of nutritional status on the ability of the subject of control in children, parents should pay attention to the fulfillment of nutrition during this *primetime* and avoid things that can interfere with nutritional fulfillment because it can result in malnutrition in children (Rohmatin and Wulan, 2019) .

In addition, malnutrition in children also causes delay in physical growth, cognitive development and neuromotor development. This is what underlies why the fulfillment of nutrition in children must be highly considered. Children with nutritional fulfillment move more actively so that they have experiences or a lot of motion literacy. The more experience a child's motion has, the more complex the movements that the child can realize. Therefore, it is important for parents to pay attention to the growth and development of motion in children and know how to provide *treatment* or training so that children can display maximum mobility early on.

CONCLUSION

Conclusions

Nutritional status has an effect of 24.3% on the control objects ability of children aged 5 to 6 years in Kayu Tanam. Based on these results, it should pay attention to the nutritional needs of children in order to support basic movement skills, especially the ability of the control object. Because improving mobility skills does not merely improve children's motor functions. Previous research states that physical activity through the development of basic motion skills positively impacts cognitive abilities caused by changes in the physiology of the human body are increased levels of neurotropic factors derived from the brain (BDNF) can

facilitate learning and maintain cognitive function by increasing synaptic plasticity and functioning as neuroprotective agent, which leads to increased neuroelectric activity and increased brain circulation (Hilma, Erickson & Kramer, 2008).

Suggestions

It is appropriate for parents of teachers and related parties to work together to pay attention to the nutritional adequacy of children in order to support physical and motoric growth and development.

Based on the conclusions of the results of the study, then there are some suggestions that researchers want to give:

1. For teachers, provide basic motion learning in order to support the basic movement skills of children. Because as it is known that a child's basic movement skills will not be able to develop without providing stimulus in the form of structured and continuous exercises.
2. For parents, pay attention to the adequacy of children's nutrition so that the child's physical, motoric and cognitive growth and development can develop as they should.

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