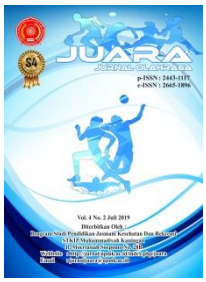
JUARA: Jurnal Olahraga
E-ISSN 2655-1896 ISSN 2443-1117
https://doi.org/doi.org/10.33222/juara.v9i2.3756



GROSS MOTOR SKILL LEVELS IN PRESCHOOLERS

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Info Artikel

Article History:

Received March 2024
Approved April 2024
Published July 2024

Keywords:

listing important terms, enabling readers to find the article, 3-5 terms, written below Abstract, bold face and italicized (Times New Roman 11)

Abstract

The purpose of this study was to determine the level of gross motor skills in preschool children. The participants in this study were preschool children, with a total of 30 children aged 5-6 years, who were selected by convenience sampling technique. The instrument of this study was the Test of Gross Motor Development-2 (TGMD-2). This study is a descriptive analysis. The results of gross motor skills showed that 5 children were in the below average assessment category (17%), 7 children were in the very poor assessment category (23%), and 18 children were in the poor assessment category (60%). Therefore, the majority of the total children's gross motor data is in the poor category. In conclusion, the competence of preschool children's gross motor skills needs to be improved by optimizing the teaching-learning process. This study contributes to the implementation of further research, namely the need for treatment to optimize Gross Motor skills in preschool children. The urgency to conduct appropriate and measurable treatments to improve preschool children's gross motor skills is important to be considered in the learning and teaching process.

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INTRODUCTION

A growing body of literature links physical activity (PA) and cognition to gross motor development in preschool children (Maïano et al., 2019; Saint-Maurice et al., 2019). PA involves people moving, acting, and performing in a culture-specific space and context, influenced by a unique set of interests, emotions, ideas, instructions, and relationships (Piggin, 2020). A successful strategy to improve gross motor skills in preschool children is to increase PA interventions (Engel et al., 2018). Preschoolers are recommended to engage in at least 60 minutes of energetic play per day (Poitras et al., 2017). Another recommendation states that this time should match the intensity of PA, i.e., at least 60 minutes for moderate to vigorous PA (MVPA) (World Health Organization, 2019). And recommendations for physical activities that can be done such as walking, exercising and cycling (Ramadan, 2022). However, these recommendations do not address how activity duration should be achieved and recognize that PA in early childhood is widely expressed in the form of active play. As such, the prevalence of PA in young children is difficult to estimate (Migueles et al., 2019).

In addition, there is evidence that FMS in childhood is associated with later academic outcomes, with children who have better motor skills being more likely to adjust to regular schooling (Duncan et al., 2021). While there are many benefits associated with childhood FMS ability, the positive determinants underlying the acquisition of FMS ability during preschool have yet to be thoroughly evaluated. This systematic review aims to find possible positive determinants for FMS in preschool-aged children (aged 3-6 years) and categorize them based on educational goals (Xu et al., 2024). This will be crucial for finding determinants that should be considered when promoting children's motor skill competence.

Basic motor skills form the basis of movements that are used to support more complex movements in sports and everyday activities. Research has shown that basic motor skills for children are essential when they are physically active throughout their lives. According to her model of the fundamental and sport phases, children should be able to improve their basic motor skills between 2 and 7 years old (Kozina, 2017). However, motor skills need to be taught properly, as they cannot come naturally to children. This prompts the idea that appropriate motor skills programs should be designed to provide the right experiences for children to improve their motor skills. To create appropriate motor skills interventions, it is important to examine children's motor abilities to know their characteristics (Escolano-Pérez et al., 2021).

Many studies have studied the description of a child's motor skills, variations in a child's motor skills, methods of motor skills intervention, and factors that fortify a child's motor skills (Moser & Reikerås, 2016). Therefore, it is important to know the factors that affect a child's motor skills. Therefore, the purpose of this study is to see the research collected. Next is to summarize have research and find its relevance for future research or practical.

Developing simple gross motor skills needed to perform daily tasks such as walking, running, jumping, throwing a ball, kicking a ball, writing, and so on is important during the preschool phase (Iivonen et al., 2013). These gross motor skills will provide the basis for acquiring future complex skills used in performing activities related to fitness, health, and sports (Bardid et al., 2016). Moving is a primary human need, and most human needs can be met by moving. For example, students need to run, jump, skip, write, and roll. Children should be taught motor skills as early as possible so that their development and growth can be properly monitored. Children's motor development is also very important for the overall development of the individual (Anderson, 2018). Children should engage in basic movements more often to interact with their surroundings. This includes developmental movements in the toddler years, such as crawling, walking, jumping, and running by the age of five.

This period of growth and development is very important as a provision for children when entering school age. At preschool age, children play games in physical education and sports lessons with the aim of finalizing basic movements (Barnett et al., 2016). Elementary school-age children are the forerunners of the nation. Therefore, they need to be nurtured and developed so that, in time, they will not only be

able to become movers and innovators but also be able to play a role as stabilizers in national development.

Considering the above, it can be observed that physical activity improves the motor performance of children from 4 to 6 years of age. In addition, the results showed that PE teachers help to improve motor development. These findings suggest that PE teachers are essential, as children can engage in regular physical activity at school. In addition, research shows that the age between 4 and 6 years old is a sensitive time for acquiring motor skills. Therefore, it is important to know the level of motor skills of preschool children, as basic motor movements are developing at this age.

METHODS

The research method used in this research is the quantitative descriptive method through an analytical survey, which is an approach used to research on certain populations or samples with sampling techniques that are usually carried out through data analysis and are more inclined toward quantitative or statistical aspects.

Participants

A kindergarten school in Cimahi City participated in this study. The sample involved 30 students aged 4-6 years who were selected using convenience sampling. Data collection was conducted with consent from the school and parents. The program was conducted under the direct supervision of the class teacher, as it is better if the intervention is conducted directly by the teacher (Brian et al., 2017).

Instrument

The TGMD-2 is a motor assessment tool that uses observation techniques. It is designed to assess the gross motor development of children aged 3 to 10 years. The Test of Gross Motor Development, 2nd Edition (TGMD-2) (Ulrich, 2000) was used to evaluate participants' FMS. It is a standardized, inexpensive, and easy-to-implement test that allows the classification of FMS in terms of overall gross motor skills. The Gross Motor Quotient (GMQ) consists of two sub-tests (locomotor and object control). The first sub-test (locomotor) includes the skills of running, sprinting, jumping, hopping, jumping (horizontal), and sliding. The second sub-test (object control) assessed the skills of hitting a stationary ball, dribbling a stationary ball, catching, kicking, throwing with the hands, and rolling with the hands. This test is used to: a) identify whether children follow similar age patterns in FMS development; b) plan physical exercise programs; c) evaluate individual FMS progress; and d) serve as an assessment tool in FMS research.

Procedure

TGMD-2 also has a scoring system for each expected performance criteria. There are 3–5 criteria for each FMS. A score of "1" is given for each criterion present and "0" when the criterion is not met. Three trials are offered (the first trial is done to familiarize the movement) for each FMS, with scores from 0 to 2 for each performance criterion. Scoring was done on the second and third trials. The maximum score of the TGMD-2 is 96 points, ranging from 0 to 48 points for each sub-test. Raw scores can be converted to percentiles and standardized scores and compared to peer assessments. The assessment can usually be completed within 20–30 minutes (Valentini, 2012).

FINDINGS AND DISCUSSION

Findings

The results of this study describe gross motor skills in preschool children to determine the level of gross motor skills in preschool children in kindergarten in Cimahi City. The average age of the children sampled in this study was 4-6 years old. The results of the data collection can be seen in the following table.

Table 1. Description of Values for Standard score subtests and GMQ (Source: TGMD-2, Ulrich, 2000)

Subtest Standard Score	*Gross Motor Quotient*	*Desciptive Ratings*	*Percentage Included*
17-20	> 130	*Very Superior*	2.34
15-16	121-130	*Superior*	6.87
13-14	111-120	*Above Avarege*	16.12
8-12	90-110	*Avarage*	49.51
6-7	80-89	*Below Avarage*	16.12
4-5	70-79	*Poor*	6.87
1-3	< 70	*Very Poor*	2.34

Table 2. TGMD-2 Test Result

Subject	Locomotor score	Control object score	Total score	GMQ	Category
1	25	24	49	70	Poor
2	19	20	39	70	Poor
3	19	19	38	65	Very poor
4	20	19	39	70	Poor
5	19	19	38	80	Below average
6	23	22	45	70	Poor
7	22	23	45	60	Very poor
8	16	15	31	70	Poor
9	19	17	36	80	Below average
10	21	22	43	70	Poor
11	21	22	43	75	Poor
12	24	24	48	75	Poor
13	19	20	39	70	Poor
14	22	22	44	70	Poor
15	21	21	42	65	Very poor
16	19	21	40	65	Very poor
17	20	20	40	65	Very poor
18	20	20	40	70	Poor
19	22	20	42	65	Very poor
20	25	23	48	75	Poor
21	19	15	34	80	Below average
22	19	18	37	75	Poor
23	21	22	43	70	Poor
24	21	21	42	75	Poor
25	21	15	36	75	Poor
26	23	19	42	70	Poor
27	22	21	43	85	Below average
28	18	21	39	65	Very poor
29	24	25	49	80	Below average
30	19	20	39	70	Poor
Average Values				71,5	Poor

In table 2 above, you can find the TGMD-2 test results for each child. The category classification given refers to Table 1 regarding the description of gross motor ability scores from the TGMD 2 test results (Ulrich, 2000). Overall, there are 5 children in the "below average" category, 7 children in the "very poor" category, and 18 children in the "poor" category.

Table 3. Total gross motor skills

No	Average Standard Score	Gross Motor Quotient	Frequency		Assessment
			N	(%)	
1	17-20	> 130	0	0	Very superior
2	15-16	121-130	0	0	Superior
3	13-14	111-120	0	0	Above average
4	8-12	90-110	0	0	Average
5	6-7	80-89	5	17	Below average
6	4-5	70-79	7	23	Poor
7	1-3	< 70	18	60	Very Poor
		Total	30	100%	

If presented, the gross motor skills of children who are in the "below average" category are 17%, the "poor" category is 23%, and the "very poor" category is 60%. The percentage results for each category can be seen in the following table.

Discussion

This study shows the overall level of gross motor skills of preschool children. In the "below average" category, there were 5 children (17%), in the "very poor" category, there were 7 children (23%), and in the "poor" category, there were 18 children (60%). Thus, it can be said that the average level of gross motor skills of the participants in this study was low, and 60% of the evaluated preschoolers did not achieve theoretical motor development.

Poor performance of a sample can be explained by several factors. First, the preschools analyzed spent 45-60 minutes per week on physical activity classes outside the classroom. So, it is a consideration of the impact of involvement in physical activity on motor skills competence (Moser & Reikerås, 2016), but with such frequency and weekly time is not necessarily enough to produce good motor development. Despite the importance of motor in preschool-age children, the preschool education Act does not set the number of hours or lessons to be allocated to learning the motor skills of preschool-age children. As a result, there is no guarantee that minimum provisions are required to improve students' motor skills, as each school decides on its own.

The second reason may have something to do with teachers teaching sports lessons. This is because sports learning in kindergarten schools is taught by classroom teachers and not graduate sports teachers from sports education. Because the level of motor skills achievement in

preschool children is influenced by the ability of teachers (Zhang et al., 2021), it would be more appropriate if the classes are led by preschool teachers who have extensive special training in the field of motor skills or professional teachers in accordance with the training of sports education science (El Ansari & Stock, 2014). By finding the right performance standards, the teaching and learning process can be tailored to meet the specific needs of students. Teachers must provide stimulus in directing children to do activities that are beneficial to their physical and mental development (Nur et al., 2020).

Teachers must provide stimulus in directing children to do activities that are beneficial for their physical and mental development (Nur et al., 2020). This will encourage students to lead a more active lifestyle (Prat et al., 2019). However, pedagogical competence, professional competence, and social competence partially from the performance of a teacher, are needed for significant and positive results (Nasrulloh et al., 2022). Preschoolers usually play games such as running and jumping. However, things like dribbling, sprinting, and sliding to the side are not included in their regular game. Therefore, previous research revealed that when activities are supervised by a specialist who has a variety of skills, and motor competencies will improve (Robinson et al., 2016). The school yard allows children to develop FMS, gross motor and physical activity that helps balance physical activity during school hours (Supriady, 2022).

Interventions provided by teachers must pay attention to children's growth and development. At an early age, children have an extraordinary ability to absorb everything around them. Because at this time, children respond quickly and are called the golden age (Doggui et al., 2021). This is in accordance with the definition of early childhood education under Law No. 20 Years 2003 stated that the kindergarten is an effort of coaching directed to children from birth to age six years conducted through the provision of educational stimuli to help physical and spiritual growth and development so that children have readiness to enter further education (Friskawati & Dwijantie, 2022).

In the first six years of life, children discover themselves and the world through movement and capture their environment through their bodies and sensations (Denysschen et al., 2021). Thus, especially in this period, children's motor performance can significantly contribute (Araçilgar & Cihan, 2018).

This research is particularly important, as young children should prepare for the gross motor development level towards more specific motor skills through physical activity. Higher levels of physical activity in children are associated with increased fitness (both cardiorespiratory fitness and muscle strength), improved bone health, and reduced body fat (Cohen et al., 2014). Thus, motor skills play an important role in children's learning and promote growth (Pahlevanian & Ahmadizadeh, 2014). Motor skills enable children to gain greater control over the environment (Fallah et al., 2015).

The results of this study can be a recommendation for further research in developing and implementing intervention programs in order to improve children's motor development optimally. However, there are some limitations in this study. Firstly, this study was conducted in one school without comparing with other schools that used different interventions. Secondly, this study only looked at the level of children's motor skills as a result of providing motor learning provided by teachers without using program interventions to improve early childhood motor skills.

CONCLUSION

Overall, the study findings showed low levels of gross motor skills in preschoolers in the analyzed samples. Given the good benefits of a good level of motor development for perceptual, cognitive, psychological, affective and social skills, as well as its impact on academic performance, it would be advisable to expand the opportunities of practicing in preschool. In addition, it is also important the involvement of teachers in carrying out the teaching and learning process by paying attention to the movement needs of students to develop motor skills of children.

This study provides specific reference values for children aged 4 to 6 years based on age and gender, in establishing the purpose of learning motion activities that will help education and professionals in early identifying higher competencies.

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