Original Article

The Motor Creativity Skills of Children in Preschool: A Study on the Effect of Sports

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Abstract

This research aims to examine the effect of sports activities on the motor creativity of children in preschool age. The research has been carried out with correlational survey model, one of the general survey models. The study group of the research consists of a total of 158 54–72-month-old children in preschool age, 79 of whom regularly do sports in the sports / activity centers in Konya province in the 2021-2022 academic year, and 79 of whom do not participate in any sports activities. "General Information Form" and, for the purpose of examining motor creativity skills, "Thinking Creatively in Action and Movement Test (TCAM)" developed by Torrance (1981) and adapted to Turkish by Karaca and Aral (2017) have been used in order to collect data for the research. The Kolmogorov-Smirnov (K-) test to determine the normality value and the Mann Whitney U-Test in paired comparisons to examine the difference between groups have been used in the data analysis. It has been determined as a result of the research that there is a statistically significant difference in the fluency and originality sub-dimensions of TCAM while there is no statistically significant difference in the imagination sub-dimension, regarding the scores of children who participate or do not participate to sports courses.

Keywords: Motor creativity, preschool age, sports, creativity.

1. INTRODUCTION

The human body requires regular activity throughout the day because of its anatomy and physiology. While this requirement was formerly a necessity, it is now a choice. People are occupied with tasks that need less physical strength and movement as a result of technological advancements. Sedentary lifestyle has been shown, in the studies conducted, to negatively affect people's health, social lives, job, and education (Owen et al., 2010; Park et al., 2020). It has been reported in some studies that the human brain eventually atrophies and shrinks in size when it is subjected to the same routine every day at desk jobs (Korte, 2020; Shors et al., 2012,Karaca and Ilkım 2021, Yurtseven et al 2018). Furthermore, some studies claim that places like schools, workplaces, and shopping malls prevent children from developing gross motor skills and cause their muscles to shorten due to their flat ground. (Hullumani, 2020,Karaaslan et al 2021).

The importance of sports in an individual's life is revealed given that today's individual lifestyles are becoming more comfortable, there are many restrictions on movement areas, the work pressure of individuals is intense, and the physical and mental fatigue experienced as a result of this increase.

When to take up a sport?

Sport is one of the most significant factors in ensuring that an individual is healthy, adaptable, and successful throughout his/her life (Talimciler, 2008). For this reason, it is necessary to take up a sport from an early age and it should be made a lifelong habit. Because psycho-motor development is one of the foundational developments of the preschool age, also known as early childhood. The continuous growth and development of the child's organism is one of the most important features of the psycho-motor development process; therefore, psycho-motor development should be well known and seriously emphasized in order for children to grow up mentally and physically healthy.

Freud argues that early life experiences induce the formation of patterns that will persist throughout the life of individuals, and mental diseases are caused by conflicts that were not resolved throughout childhood. As a result, it is suggested that physical

activities performed in early childhood and the sense of pleasure derived from them will be beneficial in instilling sports as a habit in the child's future. Erikson has emphasized that the sense of confidence and self-efficacy gained in the developmental process of children between the ages of 0-5 has a positive impact on children in the future and, during this developmental process, it is important for parents and teachers to create environments where children can play games and do sports, and ensure that children get to know their bodies and see what they can do through physical activities in these environments. Piaget put an emphasis on the cognitive and moral development of children. He has argued that physical activities and sportive activities are effective elements especially in the moral development of children, and that it will be learned through early experience that they should show a respectful attitude to themselves, their body and the opponent player, primarily through sports. Development, as defined by Havighurst, is a lifelong learning process that results from the interaction of biological, social, and cultural forces. Havighurst has underlined that physical activities, play, and movement are crucial for children's development in infancy and childhood, and that it is important to prepare a variety of sports activities for them (Orhan and Ayan, 2018).

Sports and motor creativity in the preschool age

Preschool age is a period of time that encompasses critical periods in all developmental areas of the child, supports problem-solving and reasoning abilities, promotes positive personality development by allowing the establishment of attitudes, habits, beliefs, and value judgments, and can influence an individual's quality of life in childhood, youth, and adulthood (Kandır, Özbey and İnal, 2010; Biber, 2012). In the preschool age, children are in the process of rapid growth. During this period, children move with greater coordination, exhibit extraordinary strength and speed, and tirelessly demonstrate these abilities. Along with gross motor skills like running, climbing, and jumping, they learn fine motor skills like completing puzzles, using scissors, and zipping and unzipping (İnan, 2013; Alat, 2015). During this period, the importance of providing children with environments, materials, and opportunities that promote motor development is highlighted.

Movement is one of the most basic and indispensable needs for preschool-aged children to learn about themselves and their surroundings. When children begin to notice the objects around them, they discover the existence of their bodies, which establishes a foundation for movement awareness and contributes to the development of motor creativity (Wang, 2003). It is emphasized that because children during this period are very interested in movement, when their experiences are enriched with developmentally appropriate movement activities, children can feel their bodies more comfortably and express themselves more easily through movement, and thus motor creativity develops in their movements (Felker & Treffinger, 1971; Torrance, 1981; Justo, 2008; Erbay, 2009; Cheung, 2010). It is emphasized that, while all areas of development contribute to the development of creativity, the contribution of motor skills may be greater in motor creativity (Wang 2003).

Although motor creativity is regarded as a combination of perceiving new and fresh structures, it is also defined as either addressing an unstructured problem or stating an idea or expressing an emotion through the body (Bournelli & Mountakis, 2008). Motor creativity can also be defined as the ability to create a large number of and original responses to a stimulus (Wyric, 1968). Like cognitive creativity, motor creativity includes measures of fluency, imagination, and originality (Torrance, 1981). Fluency is the ability to generate a large number of cognitive or motor solutions, whereas imagination is the ability to envision, empathize, and play uncommon roles, and originality is the ability to generate fresh and distinctive solutions (Guilford, 1967). Activities that combine these requirements, especially during the preschool age, are a natural learning area for the child (Grammatikopoulos et al., 2012; Rebecca, 2011).

Children's initial and most basic means of expressing and communicating their sentiments about themselves and others is through movement. According to Hinitz (1980), movement is a way of knowing, discovering, assessing, and expressing oneself, and movement causes emotions, which in turn creates movement. It may be argued that both movements and sports activities such as gymnastics, basketball, and swimming stimulate motor creativity, which plays a significant role in the life of a child who has been on the move since birth (Pica, 2000). Motor creativity is a valuable experience for children because it allows them to express themselves via their bodies. Children learn more about themselves and their environment when educators encourage their movement. Furthermore, providing children with opportunities to express themselves through activities such as movement and sports might help them develop their creative potential in the future (Karaca, Uzun, & Metin, 2020; Tegano et al.1991).

Sports are important both physically and socially for children. However, today's world has made it mandatory for children to spend most of their time under adult supervision, in overly protective and more structured closed environments. The opinion that since these environments restrict the natural growth of children, they cause the healthy development of children to be adversely affected (Meire, 2013), children to spend most of their time with static activities such as playing with tablets, play-station, computer and watching television at home instead of being physically active (Pate et al., 1996; Twisk, 2001; Karaca and Aral, 2020), particularly, the restriction of independent movement of children, since they are away from play environments,

which are the active life itself, has been supported by studies (Madge and Barker, 2007; Gill,2007; MacDougall et al.,2009; Kinoshita,2009; Tranter & Pawson,2001;Meire,2013; Little, 2015). Although it is well recognized that sports or an active lifestyle have multiple positive effects and that many serious disorders that develop in adulthood have their origins in childhood (Thompson et al., 2005), children's physical activity levels have declined dramatically in recent years (Janssen, Katzmarzyk, Boyce, King & Pickett, 2004). Many of the most essential developmental experiences begin the minute an individual is born and include physical control. Basic motor skills such as grasping and throwing objects, crawling, walking, running, bouncing, and jumping are a prerequisite for learning more complex skills. In the development of these movements, preschool education is of great importance. Gallahue and Donelly have emphasized that it is important to ensure the continuity of physical activity habits in children by acquiring them from preschool age (Gallahue & Donnelly, 2007). In this regard, Amman et al. have stated that sports training is their first recommendation to families (Amman, İkizler & Karagözoğlu, 2000). Because it has been emphasized that activities such as sports and physical activity are considered beneficial for children of growing age in terms of both the physical development of the child and the acquisition of a good personality and mental health (İbiş et al. 2004; Kaynak 2006; Özyürek et al. 2015).

Examining the studies on children doing sports or physical activities; it has been seen that there are studies that show evidence that students who participate sports courses have lower psychological symptom scores (Abele & Brehm,1993; Morgan,1985; Kara,2020; Arslan, Güllü & Tutal,2011; Bostancı et al., 2017), higher cognitive flexibility scores (Kara, 2020), higher academic success (Şenses, 2009; Şenduran, 2006), and that sports are effective in the positive development of motor skills (Öngül et al., 2017; İri & Aktuğ,2017), children with high motor proficiency are more successful in physical fitness tests (Saygın et al., 2005 ;Fransen et al.,2012; Uçan, Buzdağlı & Ağgön, 2018), sports increase children's capacity to cope with stress (Pollatschek, O'Hagan,1989; Johnsgard,1985;Brown & Siegel,1988; Şenduran, 2006), children's attention levels (Kartal, Dereceli, & Kartal, 2016) and communication skills (Çiçek,2018) are better, children have personality traits of extroversion and openness (Egloff & Gruhn, 1996; Courneya & Hellsten, 1998; Saygılı, Atay, Eraslan & Hekim,2015), their leadership qualities are stronger (Murray, 2006). However, it has been determined that no study has been conducted on the influence of sports on motor creativity skills in preschool children despite the fact that movement activities, such as sports, have a crucial role in revealing motor creativity in children and supporting existing creativity. From this point of view, this research aims to examine the effect of sports activities on the motor creativity of children in preschool age.

2. Method

Sample

This research was carried out within the scope of the quantitative paradigm because the direction and level of the relationship between the variables will be expressed numerically. Aiming to examine the effect of sports courses participation on motor creativity skills of children in the preschool age, this research has used the correlational survey model, one of the general survey models. Correlational survey model is a research model determining the presence or degree of change between two or more variables (Karasar, 2007; Büyüköztürk, 2018).

Measures.

Target population of the study consists of the children aged 54-72 months, participating in sports courses in Konya province in the 2021-2022 academic year. The target population of the study was determined using criterion sampling, one of the non-random purposeful sampling methods, and 158 children were included in the study. The criterion sampling method is defined as studying all cases that meet a predetermined set of criteria (Yıldırım & Şimşek, 2013). The criterion for this study has been determined to be children who have regularly participated in sports such as gymnastics, basketball, and swimming for the past year and have not been injured. In this context, a total of 158 children, consisting of 79 children who regularly participate in sports activities and 79 who do not attend any activities, have been included in the study.

Table 1. Demographic characteristics of the children and their families who participate sports courses (n=79)

Variables	**Category**	***Frequency***	**Percentage (%)**
Gender of the child	Female	44	55.7
	Male	35	44.3
Birth order	Firstborn	45	56.9
	Middle child or one of the middle children	13	16.5
	Last child	21	26.6
Status of receiving pre-school education previously	Received	30	38.0
	Not received	49	62.0
Age of the mother	Under 29 years old	19	24.1
	30-39 years old	50	63.3
	Over 40 years old	10	12.6
Age of the father	29 years old or younger	7	8.9
	30-39 years old	51	64.5
	40 years old or older	21	26.6
Education status of the mother	Primary and secondary school	17	21.5
	High school	19	24.1
	University	43	54.4
Education status of the father	Primary and secondary school	8	10.1
	High school	22	27.9
	University	49	62.0
Profession of the mother	Housewife	47	59.5
	Civil servant	21	26.6
	Self-employment	11	13.9
Profession of the father	Civil servant	21	26.6
	Worker	20	25.3
	Self-employment	38	48.1

When Table 1 is examined, it has been determined according to the demographic characteristics of the children participating in the study who do sports that 56.3% of them are female, 43.8% are male, 56.3% are firstborn, 16.3% are middle child or one of the middle children, 27.5% are last child, 37.5% have received pre-school education, 67.5% have not received pre-school education. When the demographic characteristics of the mothers of the children included in the study are examined, it has been determined that 23.8% of them are 29 years old or younger, 63.8% of them are 30-39 years old, 12.4% of them are 40 years old or older, 21.2% of them are graduated from primary-secondary school, 23.8% from high school, 55% from university, and 60.0% of them are housewives, 26.3% of them are civil servants and 13.7% of them are self-employed. When the demographic characteristics of the fathers of the children included in the study are examined, it has been determined that 8.8% of them are 29 years old or younger, 65.0% of them are 30-39 years old, 26.2% of them are 40 years old or older, 10.0% of them are graduated from primary-secondary school, 27.5% from high school, 62.5% from university, and 26.3% of them are civil servants, 25.0% of them are workers and 73.7% of them are self-employed.

Table 2. Demographic characteristics of the children and their families who didn't participate sports courses (n=79)

Variables	**Category**	***Frequency***	**Percentage (%)**
Gender of the child	Female	39	49.4
	Male	40	50.6
Birth order	Firstborn	51	64.5
	Middle child or one of the middle children	13	16.5
	Last child	15	19.0
Status of receiving pre-school education previously	Received	45	57.0
	Not received	34	43.0
Age of the mother	Under 29 years old	16	20.2
	30-39 years old	53	67.1
	Over 40 years old	10	12.7
Age of the father	29 years old or younger	9	11.4
	30-39 years old	51	64.5
	40 years old or older	19	24.1
Education status of the mother	Primary and secondary school	8	10.1
	High school	14	17.7
	University	57	72.2
Education status of the father	Primary and secondary school	7	8.9
	High school	10	12.7
	University	62	78.4
Profession of the mother	Housewife	19	24.1
	Civil servant	51	64.5
	Worker	9	11.4
Profession of the father	Civil servant	46	58.2
	Worker	17	21.5
	Self-employment	16	20.3

When Table 2 is examined, it has been determined according to the demographic characteristics of the children participating in the study who didn't participate sports courses that 48.8% of them are female, 51.2% are male, 65.0% are firstborn, 16.3% are middle child or one of the middle children, 18.2% are last child, 57.6% have received pre-school education, 42.4% have not received pre-school education. When the demographic characteristics of the mothers of the children included in the study are examined, it has been determined that 20.0% of them are 29 years old or younger, 67.5% of them are 30-39 years old, 12.5% of them are 40 years old or older, 10.0% of them are graduated from primary-secondary school, 17.5% from high school, 72.5% from university, and 21.3% of them are housewives, 62.5% of them are civil servants and 16.2% of them are self-employed. When the demographic characteristics of the fathers of the children included in the study are examined, it has been determined that 11.3% of them are 29 years old or younger, 65.0% of them are 30-39 years old, 23.7% of them are 40 years old or older, 8.8% of them are graduated from primary-secondary school, 12.5% from high school, 78.7% from university, and 58.8% of them are civil servants, 21.3% of them are workers and 19.9% of them are self-employed.

Data Collection Tools

"General Information Form" and, for the purpose of examining motor creativity skills, “Thinking Creatively in Action and Movement Test" have been used in order to collect data for the research.

General Information Form: The form developed by the researchers contains questions aimed at determining the gender of the children, the birth order, the age of the parents, their education status and their professional status. The researchers and the families filled out general information forms together.

Thinking Creatively in Action and Movement Test- TCAM: It was developed by Torrance (1981) and adapted to Turkish by Karaca and Aral (2017). The test has been designed to be applied individually to children aged three to eight, with four different activities designed to assess children's motor creativity skills. The Thinking Creatively in Action and Movement Test (TCAM) examines three sub-dimensions of creativity: fluency, originality, and imagination. Fluency is the ability to focus on finding another way to reveal a talent (practice), imagination is the ability to imagine, empathize, and take on unusual roles, and originality is the ability to come up with extraordinary, new ideas. This test consists of four activities. The first, third, and fourth activities assess the fluency and originality sub-dimensions while the second assesses the imagination sub-dimension. The test is applied to children individually. Each activity is evaluated using the evaluation criteria. Calculating the sums of fluency, originality, and imagination scores, as well as the standard scores corresponding to the total scores, yields the test's evaluation. The second activity is graded at the moment of application, while the other three activities are graded immediately upon the completion of the test. The total score obtained from all criteria in the statistical evaluation indicates the level of motor creativity. It is also recommended that the test be performed in a comfortable environment, distracting stimuli should be removed from the environment as much as possible, and the test should be applied to the participants individually or in groups of three to four people so that they are not affected by each other. The validity and reliability study carried out by Torrance (1981) of the Thinking Creatively in Action and Movement Test, with twenty children aged between three and five years, determined the test-retest reliability coefficient as .84 and the inter-rater reliability as .90. Karaca and Aral (2017), in their validity and reliability study, determined the reliability coefficient as .74 for the whole test.

Data Collection Process

Aiming to examine the correlation between motor creativity and children in preschool age who participate and non-participate to sports courses, the research primarily carried out studies to determine the study group. The study group was determined by researching sports/activity centers in Konya province and interviewing the administrators of the centers as well as the parents of the children who would be included in the study group, in order to give them information. Taking ethical criteria into account; the families of the participating children were informed; a consent form was submitted, and necessary permissions were obtained for the research. Torrance (1981) has recommended for the data collection process that the measurement tool be used in a comfortable environment, that distracting stimuli be removed as much as possible from the environment, and that it be used individually so that the participants are not affected by each other. For this reason, the measurement tool was applied to a child individually and took around 15-20 minutes. The process of obtaining all the data took approximately 2 months. The measurement tool was applied by researchers in sports centers to 79 children doing sports and volunteered to participate in the study. For the children who participate or non-participate to sports courses, the measurement tool was applied on a voluntary basis to 79 children by interviewing kindergartens affiliated to the Konya Provincial Directorate of National Education.

Data Analysis

Descriptive statistics such as frequency and percentage were used in the study to assess the demographic characteristics of children. Calculating the sums of fluency, originality, and imagination scores, as well as the standard scores corresponding to the total scores, yields the evaluation of the Thinking Creatively in Action and Movement Test. The second activity is graded at the moment of application, while the other three activities are graded immediately upon the completion of the test. The total score obtained from all criteria in the statistical evaluation indicates the level of motor creativity. The normality test of the obtained scores [Kolmogorov-Smirnoff (K-)] was applied first in the evaluation of the Thinking Creatively in Action and Movement Test As a result of the normality test; Mann Whitney U Test was used for paired comparisons while examining the difference between groups, as the values were not normally distributed. .05 was used as the significance level when examining the difference between groups, and it has been stated that there was a significant difference between the groups in the case of $p<.05$, and there was no significant difference between the groups in the case of $p>.05$ (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz & Demirel, 2011).

3. Findings

In this section, the findings obtained from the research on children who attend and do not attend sports courses are given.

Table 3. The Results of the Mann Whitney U test for the Thinking Creatively in Action and Movement Tests cores of children who participate or do not participate to sports courses (s c)

Test	Group	N	X	s.s.	Z	p
Fluency	Children who participate s c	79	77.632	8.662	-2.060	.039*
	Children who do not participate s c	79	73.911	11.062		
Originality	Children who participate s c	79	89.303	12.830	-3.899	.000*
	Children who do not participate s c	79	88.582	71.137		
Imagination	Children who participate s c	79	93.962	17.110	-.368	.713
	Children who do not participate s c	79	93.430	25.062		

Upon examining Table 3, a statistically significant difference was found in the scores of children who who participate or do not participate to sports courses in the terms of the Fluency (p=.039, z=-2.060, p<.05) and Originality (p=.000, z=-3.899, p<.05) sub-dimensions of the Thinking Creatively in Action and Movement Test. However, no statistically significant difference was found in the scores of children who participate or do not participate to sports courses in terms of the Imagination sub-dimension (p>.05). In this case, children who participate sports courses on a regular basis improve their fluency and originality scores but not their imagination scores. Considering the effect size (Cohen's d) of the difference between groups in fluency and imagination scores; the observed standardized effect size is small (d=0.04) for the fluency sub-dimension. That indicates that the magnitude of the difference between the value from Group1 and the value from Group2 is small, on the other hand, the observed standardized effect size is small (d=0.084) for the imagination sub-dimension. That indicates that the magnitude of the difference between the value from Group1 and the value from Group2 is small. Cohen's term d is an example of this type of effect size index. Cohen classified effect sizes as small (d = 0.2), medium (d = 0.5), and large (d ≥ 0.8)(Sullivan & Feinn, 2012).

4. Discussion

The concept of creativity and motor creativity is undoubtedly one of the contributions of sports or physical activities to children. Children are liberated during physical activities, they feel at ease, and they can thus express themselves through their bodies. According to Altunya, sports, in particular, force children to choose the one that will lead them to success creatively by following the rules, as it teaches and maintains regularity alongside freedom (Altunya, 2018). Because sports help children develop their already existing creativity (Coşkun, 2010). According to Trigo (1995), motor creativity is an individual's ability to generate original ideas by utilizing his/her cognitive, affective, and motor potential, as well as using his/her body while doing so (Akt. Justo 2008). According to Da Fonseca (1998), a child who uses his/her motor skills at a higher level can produce movements that increase in the future and turn into more diverse behavior styles, and this is possible with his/her creative and constructivist motor skills (Akt.Justo 2008). Craft (2000) and Tegano et al. (1991) have emphasized the role of educators and the environment in achieving the optimal balance of structure and freedom of expression for children, and they have stated that creative educators are a critical component in developing creativity in children. Because it is emphasized that motor ability maturation is important, but motor ability maturation is not effective alone, and learning, practice, and support training are also effective in improving motor ability quality (Trevlas et al. 2003, Deli et al. 2006). Torrance (1981) believes that children with original and high imagination should be given opportunities to express their ideas and feelings in a variety of ways, and that children will respond naturally and creatively to action with these opportunities, and they will do so with great pleasure in creating their own movement patterns. İri and Aktuğ argue that children do physical activity because they love and enjoy physical activity, therefore it is necessary to provide fun environments for children (İri & Aktuğ, 2017). It is expected that the

correlation between participating in sports and developing motor creativity will make a significant contribution to the field in this research. It has been determined according to the results of this research, which was conducted to examine the effect of sports on motor creativity skills of the children in the preschool age that there is a statistically significant difference (p>,05) between the scores of children who participate or non-participate to sports courses in terms of Fluency (p=,039,z=-2,060, p<,05) and Originality (p=,000,z=-3,899, p<,05) sub-dimensions of Thinking Creatively in Action and Movement Test.

Fluency is the ability to put forward a large number of thoughts related to the same stimulus (Isbell & Raines, 2003). It is stated that quantity is more important than quality in fluency (Saygın 2004). In short, fluency consists of the number of motor responses given to solve a problem or situation (Aral & Yıldız-Bıçakçı 2014). The reason why the motor creativity scores of children who do sports are higher than those who do not do sports may be the sports activities they participate in. Sports activities of children in preschool age are held with games, unlike sports activities of adults. Because in preschool age, children express their creativity more easily through movement (Bournelli, Makri & Mylonas, 2009). For this reason, sports activities are also carried out in the game environment. Such as duck walking, jumping like rabbits, galloping like horses. When educators present students with a problem, they might use a variety of approaches to find a solution. According to the findings of the study, children who participate in sports have various and unique movements with their bodies throughout the sports activities they participate in, which allows them to find more answers in number, and thus their fluency scores change significantly.

The study also discovered that children who participate in sports score higher on the originality sub-dimension of motor creativity than children who do not. Fluency represents the number of different activities performed, whereas originality represents new, unique, and unusual motor responses. Originality has the meaning of individuality, uniqueness, exclusivity, privilege and difference (Isbell & Raines 2003). Originality is also indicated as the ability to solve problems (Abdulla, Paek, Cramond & Runco, 2020). The resulting thought is new and rare, that are outside the known and simple. In other words, the answers should be unusual (Torrance, 1981; Bonk & Smith, 1998; Tuna 2000; Çakmak & Baran 2005; Şenkaya, 2005; Çeliker & Balım, 2012). It can be thought that the high originality scores of children who participate to sports courses is because of the fact that they do games or activities that will use their thinking and production abilities in their movements during the activity. For example, it can be stated in relation to a game that requires competition that play environments such as how the child can produce original solutions to win or how many different ways, he/she can overcome any obstacle with his/her body are offered. In this sense, both movements and creativity feed the creative movement, which plays an important role in the life of the child who has been on the move since the prenatal period (Pica, 2000). Because creativity is a mental process that results from creative thinking, being creative in this process is an important aspect of an individual's behavior. At the same time, creativity is a distinct action that requires an individual to explore various solutions to a motor problem using motor skills (Mohamed, 2015). From this perspective, sports activities can be said to support children's ability to come up with original solutions. As its other and final finding, the study discovered no correlation between the imagination sub-dimension of motor creativity of children who do and do not participate in sports. Creativity, which is the foundation of all aspects of an individual's life and development, is a way of thinking that is closely related to imagination (Çağatay-Aral 1990). According to research, the imagination, which serves as the foundation for creative thinking, develops most rapidly during the preschool age, and children during this time are extremely creative and imaginative (Torrance 1981). However, the study's findings do not appear to support this claim. The reason for this, it can be argued, is that children are not provided with environments that encourage their imaginations during sports activities. Furthermore, the repetition of certain movement forms for the youngest age groups to correctly shape the technique in the most basic motor skills, as well as the limitations in the number and duration of training in certain game patterns to make children between 54-72 months love sports, may be the reason for the lack of a relationship in the imagination sub-dimension.

According to the study's findings, movement is essential for preschool children's healthy growth and development (Grammatikopoulos, Gregoriadis & Zachapoulou, 2012), as is providing opportunities for children to express their own feelings and thoughts through physical movement-related activities that support their motor creativity (Greer-Paglia, 2006). Because studies show that supporting children's motor creativity improves their social-emotional development, problem-solving skills, and the development of skills such as cooperation, teamwork, decision-making, and risk-taking (Wang,2003; Lorenzo-Lasa et al., 2007; Cheung, 2010; Muhamad, Razali & Raja Adnan, 2017; Dow, 2010; Dominguez,, Diaz Pereira, & Martinez-Vidal, 2015; Moraru, Memmert & Kamp 2016; Orth, Kamp, Memmert & Savelsbergh,2017; Richard, Lebeau, Becker, Boiangin & Tenenbaum, 2018). As a result of the research, it has been determined that sports support children's motor creativity.

5. Conclusions

Children are inherently drawn to movement and physical activities. As a result, in order to meet these natural needs, both parents and teachers should create environments in which children can engage in a variety of physical activities. Furthermore, physical skills of children such as running, climbing, throwing, darting, and jumping should be encouraged, as preschool children develop rapidly during this period and form the foundation for other motor and physical skill development, particularly during this period. Sports activities should be introduced to children to help them develop these skills, gain physical awareness, and build self-confidence and self-control. In this context, it is recommended that preschool education institutions place a greater emphasis on sports activities, create an environment for physical activities in the open air, and allow children to participate in a variety of sports activities when their parents take them to sports/activity centers.

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Limitations

The limitation of this study is the other factors that may cause differences in motor creativity skills between the two groups of children, such as the general health of the children, diet, pre-school education, socio-economic status of their families, as well as the educational level of the parents, have been partially ignored.

This research is limited to the Thinking Creatively in Action and Movement Test, which was developed by Torrance (1981) and adapted into Turkish by Karaca and Aral (2017). At the same time, the sample group was limited to 158 children attending kindergartens and primary schools affiliated to the Directorate of National Education in Konya- Turkiye.

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