The Effect of Play-Based Movement Education Program in Supporting the Development of Sedentary 5-Year-Old Children[1]

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Abstract

This study aimed to investigate the impact of a play-based movement education program conducted both outdoors and in the classroom on the motor development, physical activity, and social skills of sedentary five-year-old children. For this purpose, pre-test-post-test control group model has been used. In this context, the study has been designed according to the pre-test-post-test control group model. The experimental phase of the study spanned eight weeks, divided into two consecutive four-week periods. Children in the experimental group participated in the movement education program, while those in the control group engaged in regular classroom activities during the same designated times. Children's motor skills are assessed in terms of locomotor and object control sub-skills, while their social skills are examined within the sub-dimensions of social cooperation, social independence and social acceptance, and communication skills. Pedometer measurements were used to meticulously record the number of steps taken by children in both groups. The findings of the study revealed significant improvements in the motor development and social skills of the children in the experimental group, whereas there was no noticeable improvement in these aspects among the children in the control group. Additionally, the number of steps taken by the children in the experimental group was markedly higher than those taken by the children in the control group, indicating increased physical activity levels among the experimental group participants. Importantly, the results suggest that the skills acquired by the children in the experimental group had a lasting impact. In summary, the play-based movement education program conducted outdoors and in the classroom had positive effects on motor development, physical activity, and social skills among sedentary five-year-old children, as demonstrated by the study's findings. These results emphasize the importance of incorporating such programs to enhance the overall development of young children.

Keywords: *Preschool education, Sedentariness, Physical activity, Motor development, Social skills*

E-International Journal of Educational Research

Vol: 14, No: 6, pp. 151-171

Research Article

Received: 2023-08-07
Accepted: 2023-11-11

Suggested Citation

Civelek, P & Uyanık N. (2023). The effect of play-based movement education program in supporting the evelopment of sedentary 5-year-old children, *E-International Journal of Educational Research,* 14 (6), 151-171. DOI: https://doi.org/10.19160/e-ijer.1339028

[1] This study was produced from the doctoral thesis titled "The Effect of the Play-Based Movement Education Program Applied in Different Educational Environments on the Motor Development, Physical Activities, and Social Skills of Sedentary 5- Year-Old Children," conducted under the supervision of Prof. Dr. Gülden UYANIK at Marmara University's.

INTRODUCTION

Preschool education is a systematic and planned education process that supports the development of children's potential (Bayrak & Bayrak Ayaş, 2018; T.C. Milli Eğitim Bakanlığı [MEB], 2013). It is emphasized that the preschool period, which is considered one of the most critical stages for children, plays an important role in the healthy growth and development of a child. During this period, physical, mental, social, and emotional development are influenced by motor skills, highlighting the significance of supporting this development process. During the preschool period, which is a period of rapid growth and development, children are in constant need to move around (Orhan & Ayan, 2018; Purtaş & Duman, 2017). As one of the essential elements that children use in the process of making sense of the world, movement constitutes the most vital part of life from the moment they come into the world. Even the first communication between mother and baby is based on movement. These skills support growth and development on a positive level, provide children with active behavioral patterns, and play an essential role in reducing the risk of future diseases. Thus, supporting movement skills from the early years forms the basis of a healthier life in the following years (Çelik & Şahin, 2013; Hui & Wang, 2004; Orhan, 2019). Nevertheless, children currently spend most of their time on sedentary activities indoors. There are many reasons for this, such as dense construction in urban areas, decrease in sports and park areas, increasing popularity and accessibility of technological devices, etc. In relation to this, sedentary behaviors increase and physical activity levels decrease in children (Koçan, 2012; Mustafaoğlu et al., 2018; Stone & Faulkner, 2014).

Sedentariness is a behavior characterized by low energy expenditure and low physical activity such as sitting, laying down, watching television and other screen-based activities (Hidding et al., 2017; Pate et al., 2008; Thivel et al., 2018; Tremblay et al., 2011). Physical inactivity and the resulting sedentary lifestyle, a root cause of numerous serious health problems such as obesity, diabetes, and heart diseases, is the fourth risk factor leading to death worldwide (Can et al., 2014; Harnois et al., 2023; Hills et al., 2007). Various studies point out the fact that children today are 40% more sedentary than those who was about thirty years ago. Various contemporary factors, such as fewer available playgrounds, sports, and park areas in urban settings, improper eating habits, higher use of technological devices, etc., force children to spend time indoors instead of outdoors (Bento & Dias, 2017; Cengiz & Doğtaş, 2015; Dwyer et al., 2008; Koçan, 2012; Mustafaoğlu et al., 2018; Pate et al., 2004; Stone & Faulkner, 2014). In addition, technological elements are one of the main factors that push children to a sedentary lifestyle and cause them to be less active. Reviewing the studies devoted to this subject on the literature results that the duration of technological tool use is considerably high in children (Akçay & Özcebe, 2012; Aral & Doğan Keskin, 2018; Özkan, 2017; Savaşhan et al., 2015). Besides, participating less frequently in physical activity due to sedentariness will negatively affect the motor development and social skills of children. In this regard, it is essential to support the development of these skills, which will form the basis for later periods of life, from the early years. For this rationale, using not only the classroom but also outdoor settings as educational environments is critical to support children's movement skills (Hestbaek et al., 2017; Rhoades et al., 2011; Tortella et al., 2016). Research studies emphasize the importance of implementing various physical activities from early childhood onwards, as they significantly support children's healthy physical development and the development of specific motor skills (Orhan & Ayan, 2018; Tortella et al., 2016; Trawick-Smith, 2014; Tucker, 2008; Yarımkaya & Ulucan, 2015; Zeng et al., 2017). Physical education not only enhances a child's neuromuscular coordination and physical fitness but also supports perceptual motor development and has significant implications for social-emotional development (Duman, 2013). Motor skills play a crucial role in adapting to the environment and developing social behaviors (Sun et al., 2010). Considering that motor development is interconnected with all other areas of development, deficiencies in these skills can lead to negative social skills such as lack of self-confidence, aggressiveness, and social maladjustment (MEB, 2015). It is important to remark here that movement, a basic need for children, is a counterpart of play (Gagen & Getchell, 2006). For this reason, it is crucial to provide children with play activities that support their movement development from early years (Strong et al., 2005). In addition to supporting all developmental processes of children, these activities provide children with the skills that can lead them to follow an active lifestyle (Aminian & Hinckson, 2012; Cools et al., 2011; Lubans et al., 2010). In this context, the study investigates the impact of the prepared movement-based play activities on children's social skills through their motor skills. Playing have a significant role in directly supporting the overall development of children (Çelebi et al., 2018; Derer &

Mülazımoğlu Ballı, 2018; Karaman & Süel, 2020; Ulutaş et al., 2017). Even though playing are considered to be leisure time by adults, it is known playing is the best learning means for children, especially in the early years (Koçyiğit et al., 2007). However, children nowadays spend most of their time doing sedentary activities indoors, and the time reserved for active play activities is gradually dwindling (Cengiz & Doğtaş, 2015; Mustafaoğlu et al., 2018). It is seen that the time children spend on sedentary behaviours should be further reduced from the early years, and more time should be invested in active play activities that support physical activity. Especially outdoor play activities, particularly in open spaces, support the cognitive, language, social-emotional, and motor skill development of children. Open spaces that allow children to move freely are particularly important for the development of their motor skills and social skills (Agostini et al., 2018; Bento & Dias, 2017; Monti et al., 2019). Plays leave traces about life. Therefore, especially outdoor play activities support the development of many life skills (Küçükibiş & Eskiler, 2022). In their study, Palmer et al., (2019) found that outdoor education supports the development of children's motor skills. Uhls et al. (2014) noted that outdoor education has a significant impact on promoting children's social interactions. Miranda et al., (2017) demonstrated that outdoor activities increase social participation in children. Hinkley et al., (2018) also emphasized the important role of outdoor education in supporting the development of social skills in children.

In line with the relevant literature, sedentary behaviors due to low physical activity negatively affect children's motor development and social skills. Therefore, it is believed that a movement-based educational program designed specifically for sedentary children would be effective in enhancing their physical activities, motor development, and social skills. In the study, children's physical activities were measured based on step counts. When reviewing the literature, it can be observed that many studies measure physical activity based on step counts (Aygün Polat, 2017; Bulca et al., 2020; Ertekin, 2018; Karakullukçu Özkan, 2015; Mendoza et al., 2015; Taşbilek Yoncalık, 2016). Therefore, there is a need for movement education programs, especially those implemented in non-traditional settings, to support the motor development, physical activities, and social skills of sedentary children. In this context, the general aim of the study is to examine the impact of a play-based physical education program applied to sedentary 5-year-old children in the preschool period on their motor development, physical activities, and social skills.

METHOD

1- Model of Research

In the study, pretest-posttest control group model was used to examine the effect of the play-based movement education program applied in different educational settings on the development of motor development, physical activity and social skills of sedentary five-year-old children. Throughout the experiment process, the children in the experimental group followed a play-based movement education program for eight weeks outdoors and in the classroom. Conversely, the children in the control group continued their daily activities in the classroom. Within the scope of the study, the main goal is to emphasize the importance of implementing movement education programs in outdoor areas and the classroom. In this respect, the study divided the experimental process into two separate four-week periods without a break. In the first four-week period, the play-based movement education program was applied to the children in the experimental group in the outdoor. The same activities were carried out in the classroom in the second four-week period. Thus, the study also analyzed the effect of play-based movement activities implemented in different educational environments on the experimental group. On the other hand, children in the control group engaged solely in daily activities in the classroom during the same days and hours. The physical activities of the children were measured by the number of steps taken during the activities carried out. In this regard, pedometer measurements were performed in both groups. During the experimental process, the play-based movement education program was applied to the children in the experimental group three days a week, and there was only one activity lasting between 60 minutes every day. Four weeks after the implementation process, a permanence test was given to the children in the experimental group to observe the retention of the acquired skills.

2- Study Group

The study group of the research consists of 12 sedentary children aged 5 (ne=7, nc=5) attending preschool education in the center of Bilecik province. Since the study was designed with an experimental

model, it was conducted without going through the process of population and sample selection, focusing instead on the study group. The average age of children in the experimental group is 68.4 months, while in the control group, it is 69.6 months. The experimental procedure of the study was conducted during the Covid-19 pandemic. Due to a decrease in the number of children attending school during this period, the study was conducted with 12 children. The following criteria were used as the basis for determining the study group and examining the sedentary behaviors of the children.

2.1. Inclusion Criteria for the Study Group

Two primary criteria were used to determine the sedentary behavior of the study group of children. The first criterion was based on the physical activity criteria defined by the World Health Organization (WHO) and the Ministry of Health of the Republic of Turkey for preschool children. According to these criteria, children aged 5-17 should engage in moderate-to-vigorous physical activities (such as brisk walking, slow running, dancing, etc.) for at least 60 minutes per day, and engage in high-intensity physical activities (such as running, basketball, soccer, volleyball, tennis, etc.) for at least 3 days per week (T.C. Sağlık Bakanlığı, 2014b; WHO, 2019; WHO, 2020). In selecting the study group, it was emphasized that the children's physical activity levels should be below these defined criteria. Furthermore, the Turkey Nutrition and Health Survey Report states that children aged 5 spend an average of 3.46 hours per day on sedentary behaviors such as watching TV, videos, DVDs, using tablets/computers, and the internet (T.C. Sağlık Bakanlığı, 2014a). Thus, the criterion for identifying sedentary children in the study group was having a minimum of 3.46 hours of sedentary behavior per day.

Out of the experimental group children, 2 did not engage in any physical activity. Five children engaged in various physical activities with different frequencies and durations. Among the girls in the experimental group, all of them rode bicycles for one or two days a week, with durations ranging from 30 to 60 minutes. Among the boys in the experimental group, 2 did not engage in any physical activity, while 2 children were interested in activities such as playing soccer and riding bicycles, with durations of 60 minutes. In the control group, 3 children did not engage in any physical activity. Two children engaged in various physical activities with varying frequencies and durations. One child was interested in both cycling and soccer, while another child was only interested in cycling. The frequency of these activities varied between one and two days a week, with durations ranging from 30 to 60 minutes.

Analyzing the screen-based activity durations of the children in both experimental and control groups, it was found that among the girls in the experimental group, the average daily duration of watching TV, videos, DVDs was 2.6 hours, while the duration of using tablets/computers and the internet was 1.3 hours. For the boys, the average daily duration of watching TV, videos, DVDs was 4.7 hours, and the duration of using tablets/computers and the internet was 1.7 hours. The total screen time for the experimental group was 3.8 hours for TV-related activities and 1.5 hours for tablet/computer-related activities, making a total of 5.4 hours of sedentary behavior. In the control group, the average daily duration of watching TV, videos, DVDs was 3.5 hours for girls and 3.3 hours for boys. The duration of using tablets/computers and the internet was 0.5 hours for girls and 1.6 hours for boys. The total screen time for the control group was 3.4 hours for TV-related activities and 1.2 hours for tablet/computer-related activities, making a total of 4.6 hours of sedentary behavior.

As a result, both the experimental and control groups met the sedentary behavior criteria outlined. Therefore, based on the data obtained, it was determined that all children were sedentary. Following this, a pretest was administered to observe the motor development and social skills of sedentary children in both the experimental and control groups. The children's motor development was assessed using the "Test of Gross Motor Development (TGMD)", while their social skills were evaluated using the "Preschool and Kindergarten Behavior Scale" and the "Social Skills Scale." Due to the limited number of participants, data on the children's social skills were obtained from both parents and teachers. Social skills were assessed in terms of social cooperation, social independence, and social acceptance, while motor development was evaluated in terms of locomotor skills and object control skills. The collected data indicated that there was no significant difference in motor skills and social skills scores between the pretest scores of the experimental and control groups.

Additionally, it was important that there were no physical activity education programs implemented in the classes attended by the children. Furthermore, the absence of specially designed

educational programs focused on motor development and social skills in the classes attended by the children was also taken into consideration.

2.2. Exclusion Criteria for the Study

The exclusion criteria for the study group are as follows:

- Children should engage in moderate-to-vigorous-intensity activities for at least 60 minutes daily and participate in vigorous-intensity physical activities for a minimum of 3 days a week.
- Children's screen-based activity time should be 3.46 hours or less.
- The implementation of physical activity-supportive educational programs in children's classrooms.
- The implementation of educational programs in children's classrooms that support motor development and social skills.

3- Data Collection Tools

In this study the examined the motor development of the children with the "Test of Gross Motor Development (TGMD)" adapted to Turkish by Tepeli (2007). It also investigated their social skills with the "Kindergarten and Kindergarten Behavior Scale" adapted to Turkish by (Alisinanoğlu & Özbey, 2009) and "Social Skills Scale" (Kapıkıran et al., 2006). While the sedentaryness of the children was obtained through the "Physical Activity Form for Preschool Children" developed by the researcher.Children's physical activity was obtained by the pedometer measurements. In this context, the number of steps taken in the activities was recorded in the observation form prepared by the researcher. Prior to the implementation process, necessary permissions regarding the usage of scales have been obtained.

3.1. Physical Activity Form

The "Physical Activity Form for Preschool Children" was created by the researcher to examine the physical activity levels, frequency, and durations of physical activity engagement of preschool-aged children. In this context, the form was prepared to determine children's physical activity levels and investigate their sedentary behaviors. The process of creating the form began with a thorough review of the relevant literature. Following the literature review, no measurement tool related to examining the physical activities of preschool children in Turkey was found. Therefore, there was a need for a form to assess physical activities in preschool-aged children. In the development of the form, criteria defined by the WHO (World Health Organization) and the Ministry of Health for physical activity in children were taken into consideration, as well as criteria related to sedentary behaviors outlined in the "Turkey Nutrition and Health Survey-2010 (TBSA)" report. The prepared form was initially sent to experts in the field, and necessary revisions were made based on expert opinions. Subsequently, the form was pilot-tested with parents. After receiving feedback from parents, the final version of the form was established. The form consists of two sections. The first section was created to determine the time spent on sedentary behaviors mentioned in the TBSA-2010 report (such as watching TV, videos, VCDs, DVDs, and using computers or the internet). It contains a total of 10 questions. The second section of the form was prepared in line with the physical activity criteria defined by the WHO and the Ministry of Health for children. It includes three questions and is designed to assess the children's engagement in physical activities, the frequency of their engagement, and the duration of their physical activity involvement. In summary, the form consists of a total of 13 items and is designed to assess preschool children's physical activity levels and sedentary behaviors based on the criteria.

3.2. Test of Gross Motor Skills

Test of Gross Motor Skills, was developed based on the "Test of Gross Motor Development-Second Edition (TGMD-2)" standardized in the United States in 2000 by Dale A. Ulrich. It was adapted to Turkish by Tepeli in 2007 for children aged 3 to 10. The BGMS consists of two sub-tests: the locomotor sub-test and the object control sub-test. The scale is administered using a practitioner record form and various materials such as different types of balls, traffic cones, plastic rods, etc. The test typically takes around 15-20 minutes to administer for each child. Within this process, each motor skill behavior listed on the record form is performed by the child twice, and scores are given for both attempts. If the child performs the skill correctly, they receive 1 point; otherwise, they receive 0 points for that particular attempt. Scores from both attempts are then added together. By summing up the skill scores, raw scores for each sub-test are obtained. As a result of the validity and reliability analyzes of the scale made by Tepeli, it was seen that the scale has a valid and reliable structure. Cronbach Alpha reliability and test-

retest reliability analyzes were performed by the researcher within the scope of reliability analyses. In this context, the alpha coefficient was found to be .82 for locomotor skill, .90 for object control skill and .86 for gross muscle skill score. The test-retest application of the study was carried out on 30 children with an interval of three weeks. According to test-retest analyses, the correlation value was found to be .94 for locomotor skill, .93 for object control skill, and .89 for gross muscle skill score. In addition, within the scope of the pilot study, a video was taken regarding the application process of the scale for three children and scoring was carried out by obtaining the necessary permissions. In this context, the pilot application of the scale was carried out on 15 children. During the application of the scale, a video was taken regarding the application process of the scale for three children, with the necessary permissions, and scoring was done on the BüKBÖT registration form. The videos taken and the BüKBÖT registration form were sent to the scale owner via e-mail. In this context, the application and scoring of the scale by the researcher was examined by the scale owner and the necessary feedback was sent to the researcher via e-mail. By paying attention to these feedbacks, the application process of the scale was started.

3.3. Kindergarten and Kindergarten Behavior Scale

Preschool and Kindergarden Behavior Scales (PKBS-2) was developed by Kenneth W.Merril in 1994 to measure the social skills and problem behaviors of 3-6 year old children in the preschool period; the validity and reliability study of the scale for Turkish children was conducted by Alisinanoğlu & Özbey (2009). In this context, the scale consists of social skills and problem behavior scales. The scale can be applied to parents and teachers. In accordance with the purpose of the research, only the Social Skills Scale section was used in the study. The Social Skills Scale, consisting of 23 items, is a four-point Likert type. Reliability analyzes were obtained by the researcher through Cronbach Alpha, test-retest and inter-rater agreement analyses. In this context, the scale was applied to parents and teachers. As a result of the Cronbach Alpha reliability analysis of the scale obtained from teachers, the alpha coefficient of the social cooperation skills sub-dimension was found to be .82, and the alpha coefficient of the social independence and social acceptance skills sub-dimension was found to be .90. As a result of the Cronbach Alpha reliability analysis of the scale obtained from parents, the alpha coefficient of the social cooperation skills sub-dimension. 91, and the alpha coefficient of the social independence and social acceptance skills sub-dimension was found to be .85. The test-retest application of the study was carried out on 30 children with an interval of three weeks. In this context, according to the test-retest analyzes obtained from the teachers in the study, the correlation value for the social cooperation skills sub-dimension was found to be .92, and the correlation value for the social independence and social acceptance skills sub-dimension was .84. According to the test-retest analyzes obtained from the parents, the correlation value for the social cooperation skills sub-dimension was found to be .90, and the correlation value for the social independence and social acceptance skills sub-dimension was found to be .92. Rater reliability analyzes conducted between teachers and parents were obtained within the scope of pretest-posttest-follow-up tests. In this regard, ICC (intraclass correlation coefficient) values for social cooperation skills were found to be .70, .95 and .93, respectively, and ICC values for social independence and social acceptance skills were found to be .75, .88 and .81.

3.4. Social Skills Scale

Social Skills Scale was developed by Kapıkıran et al., (2006) to evaluate the social skills of preschool children. The scale consists of three subscales: communication, shyness and noncompliance. The 45-item scale is a five-point Likert type. The scale can be applied to parents and teachers. In accordance with the purpose of the research, only the communication sub-dimension was used in the study. Reliability analyzes were obtained by the researcher through Cronbach Alpha, test-retest and inter-rater agreement analyses. In this context, the scale was applied to parents and teachers. As a result of the Cronbach Alpha reliability analysis of the scale obtained from teachers, the alpha coefficient of the communication sub-dimension was found to be .71, and as a result of the Cronbach Alpha reliability analysis obtained from parents, the alpha coefficient of the communication sub-dimension was found to be .81. The test-retest application of the study was carried out on 30 children with an interval of three weeks. In this context, according to the test-retest analyzes obtained from teachers in the study, the correlation value for the communication sub-dimension was found to be .87, and according to the test-re-test analyzes obtained from parents, the correlation value for the communication sub-dimension was found to be .92. Rater reliability analyzes conducted between teachers and parents were obtained within

the scope of pretest-posttest-follow-up tests. In this regard, ICC (intraclass correlation coefficient) values for communication skills were found to be .92, .97 and .97, respectively.

3.5. Observation Form

Observation Form was prepared by the researcher in order to record the number of steps taken by the children in the experimental and control groups during the applied activities. In this context, the form contains a table in which the date of the activities, the name of the activity, and the number of steps taken by the children in the activities are recorded. Step counts obtained from pedometer measurements used during the activities are recorded on the form for each child. A separate observation form is used for each activity implemented. In this context, 24 separate forms were used for the experimental group and 24 separate forms for the control group in line with the activities. While the number of steps taken by the children in the experimental group during the activities carried out within the scope of the experimental procedure was recorded on the form by the researcher, the number of steps taken by the children in the control group during the activities was recorded on the form by the classroom teacher.

4- Data Collection Process

The necessary permissions have been obtained before the data collection process (ethics committee approval, Ministry of Education permission, scale permissions). Following that, the pilot study phase was initiated. The pilot study of the research was conducted with 15 children and their parents at an independent preschool located in the center of Bilecik province. In this context, during the pilot study process, a total of 12 activities were implemented by conducting 2 activities per day. The test-retest application of the study was conducted using the "Gross Motor Skills Measurement Test," "Social Skills Scale," and "Preschool and Kindergarten Behavior Scale." In this context, the test-retest application was carried out with 30 children, their parents, and their teachers. After the initial application process, the scales were administered again to 30 children, their teachers, and parents 21 days later. Subsequently, the experimental process of the study was initiated. The experimental procedure of the study was conducted at an independent preschool located in the center of Bilecik province. Initially, the necessary permissions were obtained, and a suitable day was chosen. A meeting was held with the institution's director where information about the study's purpose, process, and the measurement tools to be used in the study were provided. Following that, specific classrooms within the 5-year-old age group were identified, and the sedentary behaviors of the children were examined. Children identified as sedentary were subjected to a pre-test application. Following the pre-test application, an 8-week experimental procedure was initiated, and at the conclusion of the experimental process, all children were administered the relevant scales as post-tests. our weeks after the post-tests were administered, follow-up measurements were conducted for both the experimental and control groups of children.

5- Preparation of the Play-Based Movement Education Program

In the process of preparing the play-based movement education program, relevant studies conducted both domestically and internationally were examined, along with examples of activity books related to the topic. The researcher created a pool of activities for the program. Necessary adjustments were made to these activities, resulting in the development of 16 activity plans. These plans encompassed activities for both locomotor skills and object control skills. Detailed activity plans were created for each of the sub-skills, and activity schedules were organized.

The play-based movement education program consists of both large and small group activities, aiming to support children's social skills through these interactions. The primary goal of the activities in the program is to enhance children's motor skill development while also promoting the development of social skills through their motor progress. Care was taken to ensure that the activities in this program were not solely individual activities. Furthermore, the activities were designed to integrate play with each sub-skill, avoiding a direct instructional approach that might hinder the natural learning process. Since the experimental procedure of the study was planned to take place both outdoors and indoors, the activities were designed to be suitable for both environments.

Each activity plan includes the activity's name, date, objectives, skills acquired, materials used, the learning process, and assessment sections. The prepared activity plans were initially presented to six experts. The experts were asked to provide their opinions on the skills intended to be developed for each activity through an evaluation table. Based on the feedback received, a content validity analysis

was conducted. As a result, four activities had a content validity ratio of 0.67. Since the number of experts was six, KGO value of 0.99 was taken as a basis, leading to the exclusion of these four activities from the study. When considering the remaining 12 activities, the KGO ratios were found to be 1.00 for each activity, indicating a high level of agreement among the experts. Therefore, these 12 activities were included in the study.

The activities were initially applied to children in the five-year-old age group during a pilot study. Based on expert opinions and the results of the pilot study, the program was refined and the activities were made ready for implementation. The Play-Based Movement Education Program was designed to span 8 weeks, with sessions conducted three times a week, and each activity lasting for 60 minutes. Over the course of the program, each activity was implemented twice: once outdoors and once indoors, within four-week periods. In total, 24 activities were conducted throughout the 8-week program. An example of an activity plan is provided in Table 1.

Table 1. *Table for The Activity Plan*

<table>
<tr><th colspan="3">Program Process</th></tr>
<tr><td>14:00 p.m. - 14:10 p.m.</td><td>Preparation and Introduction to the Activity</td><td>Talking to children and providing them with information about the activity process</td></tr>
<tr><td>14:10 p.m. - 14:50 p.m.</td><td>Activity Process</td><td>Structured activity implementations</td></tr>
<tr><td>14:50 p.m. -15:00 p.m.</td><td>Ending The Activity</td><td>• Recording the number of steps taken by children during structured activities.
• Evaluating the activities conducted with children throughout the day.</td></tr>
<tr><th colspan="3">Activity Plan</th></tr>
<tr><td colspan="3">Activity Name: Bounce Bounce Balloon
Objective: The objective of this activity is to support the development of children's locomotor skills and the acquisition of various social skills such as cooperation, coordinated movement, working together to achieve a goal, and communication during the activity.
Skills Developed During the Activity:
• Locomotor skills (jumping on one foot),
• Social skills (social cooperation, communication)
Materials: Green and red tape, balloons, traffic cone
Date of Activity Implementation: ... / ... / ...</td></tr>
<tr><th colspan="3">Learning Process</th></tr>
<tr><td colspan="3">Two traffic cones are placed between the starting and finishing lines created with green and red tape. The class is divided into two groups. Children are asked to line up at the starting line. Balloons are given to the children, and they are instructed to place the balloon between their legs and carry it from the starting line to the finishing line while following the given instructions (jumping on one foot, walking, etc.) as they pass between the cones. After all children have participated in the activity, it continues in pairs using the same processes. First, the children are paired up, and the class is divided into two groups. Children are asked to line up behind the starting line with their partners. Each pair is given a balloon. Children are instructed to place the balloon between their legs and, while holding their partner's hand, carry the balloon together to the finishing line following the given instructions. The activity concludes with the participation of all children. At the end of the activity process, traditional children's songs are played to capture the children's attention. Then, the children are asked questions about the activities carried out during the day for evaluation.</td></tr>
<tr><td colspan="3">Assessment:
- Which activity did we do today?
- What did we do during the activity process?
- What materials did we use in the activity?
- What movements did you make while carrying the balloon during the activity?
- Did you enjoy the activity we did?
- Were there any parts of the activity where you found it challenging?</td></tr>
</table>

6- Data Analysis

Primarily in the study, obtained data on the frequency and duration of children's interest in physical activities and the time they spent on sedentary behaviors to quantify their sedentary behaviors. In doing so, descriptive statistical analyses were used to analyze the data obtained in this context. In the context of the remaining stages of the work non-parametric analysis methods were preferred in the analysis of the data because the data sample was small regardless of the validity of the normal distribution assumption. The difference between independent groups was analyzed with Mann Whitney U Test; the difference between dependent groups was analyzed with Wilcoxon Signed Rank Test; and repeated measures were analyzed with Friedman Test.

FINDINGS

It is observed that a sedentary lifestyle leads to a decrease in children's physical activities, and the decrease in physical activity levels negatively affects children's motor and social skill development, among other aspects. In this context, the aim of the study is to investigate the effects of a play-based movement education program on the motor development, physical activity levels (measured through step counts), and social skill development of sedentary 5-year-old children.

In this context, Table 2 and Table 3 present the findings related to motor skills. Table 2 presents the pre-test-post-test Mann-Whitney U-test results regarding motor skills.

Table 2. *U-test results of the experimental and control groups' pre-test and post-test scores of motor skills*

	Dimensions	Group	n	Mean	Std. Deviation	Mean Rank	Rank Sum	U	z	p
Pre-test	Locomotor	Experimental	7	30.4	6.1	6.0	42.5	14,500	-.492	.622
		Control	5	31.6	5.3	7.1	35.5			
	Object Control	Experimental	7	24.8	5.8	6.0	42.5	14.500	-.488	.626
		Control	5	26.8	6.1	7.1	35.5			
	Total Scale	Experimental	7	76.0	17.0	6.0	42.5	14.500	-.492	.623
		Control	5	80.4	10.9	7.1	35.5			
Post-test	Locomotor	Experimental	7	45.1	2.2	9.0	63.0	.000	-2.872	.004*
		Control	5	34.4	4.3	3.0	15.0			
	Object Control	Experimental	7	40.2	1.7	9.0	63.0	.000	-2.867	.004*
		Control	5	29.0	5.5	3.0	15.0			
	Total Scale	Experimental	7	117.5	7.5	9.0	63.0	.000	-2.852	.004*
		Control	5	84.6	10.6	3.0	15.0			

*p<0.05

Examining Table 2 shows that there is no significant difference between the locomotor, object control, and motor skills total scores of the children in the experimental and control groups in the pre-test (U= 14.500, p>0,05). On the other hand, there is a significant difference between the locomotor, object control, and motor skills total scores of the experimental and control groups in the post-test (U=,0000, p<0,05). Looking at the mean scores, mean rank, and rank sum, it is seen that the children in the experimental group who participated in the play-based movement education program had higher locomotor, object control, and total scale motor skill scores in the post-test than the children in the control group who did not participate in the program.

The results of the Wilcoxon Signed Ranks Test conducted to examine whether there was a significant difference between the locomotor, object control, and motor skill total scores of the children in the experimental and control groups before and after the experimental procedure are shown in Table 3.

Table 3. *Wilcoxon signed ranks test results for motor skills of experimental and control groups*

Group	Dimensions	Posttest-Pretest	n	Mean Rank	Rank Sum	z	p
Experimental	Locomotor	Negative rank	0	.00	.00	-2,375	.018*
		Positive rank	7	4.00	28.00		
		Equal	0				
	Object Control	Negative rank	0	.00	.00	-2.384	.017*
		Positive rank	7	4.00	28.00		
		Equal	0				
	Total Scale	Negative rank	0	.00	.00	-2.371	.018*
		Positive rank	7	4.00	28.00		
		Equal	0				
Control	Locomotor	Negative rank	0	.00	.00	-1.890	.059
		Positive rank	4	2.50	10.00		
		Equal	1				
	Object Control	Negative rank	1	1,00	1.00	-1.761	.078
		Positive rank	4	3.50	14.00		
		Equal	0				
	Total Scale	Negative rank	0	.00	.00	-1.633	.102
		Positive rank	3	2.00	6.00		
		Equal	2				

*p<0.05

Table 3 shows a significant difference between the locomotor, object control, and motor skill total scores of the children in the experimental group before and after the experimental process ($p<0.05$). Moreover, the mean rank and rank sums demonstrate the difference favoring the post-test. In this context, according to the table, it is seen that the play-based movement education program has an effect on improving the motor skills of the children in the experimental group. According to Table 3, no significant difference between the locomotor, object control, and motor skill total scores of the children in the control group who continued their in-class daily education before and after the experimental procedure ($p>0.05$). Within this context, the statistical outcomes showed that the daily activities performed in the classroom were not effective in improving the motor skills of the children in the control group. In light of the findings obtained from Table 1 and Table 2, the first hypothesis of the study was accepted.

Table 4 and Table 5 present the findings related to social skills. Table 4 presents the pre-test-post-test Mann-Whitney U-test results regarding social skills.

Table 4. *U-Test Results of the experimental and control groups' pre-test-post-test mean scores of social skills*

Participant Group		Dimensions	Group	n	$\bar{x}$	SD	Mean Rank	Rank Sum	U	z	p
Pre-Test	Teacher	Social Cooperation	Experimental	7	40.1	2.6	7.1	50.0	13.000	-.749	.454
			Control	5	38.6	3.2	5.6	28.0			
		Social Independence and Social Acceptance	Experimental	7	25.4	4.5	6.8	48.0	15.000	-.414	.679
			Control	5	23.6	1.8	6.0	30.0			
		Communication	Experimental	7	86.8	5.5	8.1	57.0	6.000	-1.887	.073
			Control	5	80.8	5.6	4.2	21.0			
	Parents	Social Cooperation	Experimental	7	38.0	5.4	7.1	50.0	13.000	-.737	.461
			Control	5	36.2	3.7	5.6	28.0			
		Social Independence and Social Acceptance	Experimental	7	26.7	3.2	7.7	55.5	8.500	-1.480	.139
			Control	5	24.4	.8	4.7	23.5			
		Communication	Experimental	7	84.7	4.9	8.1	57.0	6.000	-1.905	.073
			Control	5	76.4	8.5	4.2	21.0			
PostTest	Teacher	Social Cooperation	Experimental	7	43.2	0.9	8.7	61.0	2.000	-2.615	,009*
			Control	5	38.6	3.2	3.4	17.0			.027*
		Social Independence and Social Acceptance	Experimental	7	28.7	3.6	8.4	59.0	4.000	-2.216	.004*
			Control	5	23.6	1.8	3.8	19.0			
		Communication	Experimental	7	104.2	2.9	9.0	63.0	.000	-2.862	
			Control	5	81.4	6.2	3.0	15.0			
	Parents	Social Cooperation	Experimental	7	41.8	2.3	8.2	58.0	5.000	-2.063	,039*
			Control	5	37.2	3.4	4.0	20.0			
		Social Independence and Social Acceptance	Experimental	7	30.0	2.2	9.0	63.0	.000	-2.888	.004*
			Control	5	25.4	.8	3.0	15.0			
		Communication	Experimental	7	101.4	4.5	9.0	63.0	.000	-2.842	.004*
			Control	5	77.6	8.8	3.0	15.0			

*$p<0.05$

Table 4 reveals no significant difference between the social cooperation, social independence and social acceptance, and communication skill total scores of the children in the experimental and control groups in the pre-test ($p>0.05$). In contrast, there was a significant difference between the social cooperation, social independence and social acceptace, and communication skill scores of the experimental and control groups in the post-test ($p<0.05$). Assessing the mean scores, mean rank, and rank sums indicates that the children in the experimental group who participated in the play-based movement education program had higher social cooperation, social independence and social acceptance, and communication skill scores in the post-test than the children in the control group who did not participate in the program.

The findings of the Wilcoxon Signed Ranks Test conducted to examine whether there was a significant difference between the social cooperation, social independence and social acceptance, and communication skill scores of the children in the experimental and control groups before and after the Experimental procedure are presented in Table 5.

Table 5. *Wilcoxon signed ranks test results for social skills of experimental and control groups*

Participant Group	Group	Dimensions	Posttest-Pretest	n	Mean Rank	Rank Sum	z	p
Teachers	Experimental	Social Cooperation	Negative rank	0	.00	.00	-2.375	.018*
			Positive rank	7	4.00	28.00		
			Equal	0				
		Social Independence and Recognition	Negative rank	0	.00	.00	-2.226	.026*
			Positive rank	6	3.52	21.00		
			Equal	1				
		Communication	Negative rank	0	.00	.00	-2.375	.018*
			Positive rank	7	4.00	28.00		
			Equal	0				
Parents		Social Cooperation	Negative rank	0	.00	.00	-2.384	.017*
			Positive rank	7	4.00	28.00		
			Equal	0				
		Social Independence and Recognition	Negative rank	0	.00	.00	-2.214	.027*
			Positive rank	6	3.50	21.00		
			Equal	1				
		Communication	Negative rank	0	.00	.00	-2,371	.018*
			Positive rank	7	4.00	28.00		
			Equal	0				
Teachers	Control	Social Cooperation	Negative rank	0	.00	.00	.000	1.000
			Positive rank	0	.00	.00		
			Equal	5				
		Social Independence and Recognition	Negative rank	0	.00	.00	.000	1.000
			Positive rank	0	.00	.00		
			Equal	6				
		Communication	Negative rank	1	2.00	2.00	-1.134	.257
			Positive rank	3	2.67	8.00		
			Equal	1				
Parents		Social Cooperation	Negative rank	1	2.00	2.00	-1.518	.129
			Positive rank	4	3.25	13.00		
			Equal	0				
		Social Independence and Recognition	Negative rank	1	2.00	2.00	-1.518	.129
			Positive rank	4	3.25	13.00		
			Equal	0				
		Communication	Negative rank	0	.00	.00	-1.857	.063
			Positive rank	4	2.50	10.00		
			Equal	1				

*p<0.05

Table 5 presents a significant difference between the social cooperation, social independence and social acceptance, and communication skill scores of the children in the experimental group before and after the experimental procedure (p<0.05). Moreover, the mean rank and rank sums demonstrate the difference favoring the post-test. In this context, according to the table, it is seen that the play-based movement education program had an effect on improving the social skills of the children in the experimental group.

According to Table 5, no significant difference was observed between the social cooperation, social independence and social acceptance, and communication skill scores of the children in the control group who continued their daily in-class education before and after the experimental procedure (p>0.05). In this context, it can be said that the daily activities carried out in the classroom were not effective in improving the social skills of the children in the control group. In light of the findings obtained from Table 4 and Table 5, the second hypothesis of the study was confirmed.

Table 6 and Table 7 provide the findings related to step counts. Table 6 presents the pre-test-post-test Mann-Whitney U-test results regarding number of steps.

Table 6 reveals a significant difference between the number of steps the children in the experimental group took during the activities in the play-based movement education program and the number of steps the children in the control group took during daily activities in the classroom (p<0.05). Looking at the mean scores, mean rank, and rank sums, it is seen that the mean number of steps of children in the experimental group (who participated in the play-based movement education program was significantly higher than the children in the control group. Table 6 also demonstrates that the number of steps taken by the children in the experimental group who participated in the play-based

movement education program carried out both in the outdoor and in the classroom during four-week periods was significantly higher than the number of steps taken by the children in the control group in daily activities in the classroom (p<0.05). Therefore, the play-based movement education program carried out outdoors and in the classroom was noteworthy in the physical activities of the children in the experimental group through the number of steps.

Table 6. *U-Test results concerning the number of steps children in the experimental and control groups took during the activities*

Experimental Process	Group	n	$\bar{x}$	Std. Deviation	Mean Rank	Rank Sum	U	z	p
First Four-Week Period (Outdoors)	Experimental	7	16335.2	720.5	9.0	63.0	.000	-2.842	.004*
	Control	5	2836.6	184.7	3.0	15.0			
Last Four-Week Period (Classroom)	Experimental	7	11676.0	241.2	9.0	63.0	.000	-2.842	.004*
	Control	5	3637.6	304.5	3.0	15.0			
Total (Eight week)	Experimental	7	28011.2	834.4	9.0	63.0	.000	-2.842	.004*
	Control	5	6474.2	394.2	3.0	15.0			

*p<0.05

Table 7 presents the findings of the Wilcoxon Signed Ranks Test concerning the number of steps the children in the experimental group took in the activities implemented within the scope of the play-based movement education program carried out outdoors and in the classroom.

Table 7. *Wilcoxon signed ranks test results for the number of steps children in the experimental group during outdoor and classroom activities*

Outdoors-Classroom	n	Mean Rank	Rank Sum	z	p
Negative rank	0	.00	.00	-2,366	.018*
Positive rank	7	4.00	28.00		
Equal	0				

*p<0.05

Table 7 reveals, it is seen that there is a significant difference between the number of steps taken by the children in the experimental group in the activities in the play-based movement education program applied in the outdoor and in the classroom (U=,000, p<0.05). As the mean rank, and rank sums are examined, it is seen that the number of steps taken by the children in the experimental group in the activities performed in the outdoor is significantly higher than the number of steps taken in the activities performed in the classroom. In light of the findings obtained from Tables 5 and 6, the third hypothesis of the study was validated.

Friedman Analysis findings for the permanent measurements of the motor and socil skills of the children in the experimental group are presented in Table 8 and Table 9. Table 8 presents the Friedmen Anaysis-test results regarding motor skills.

Table 8. *The friedman analysis results of the observation test of motor skills of the experimental group*

Dimensions		n	Mean	Sts. Deviation	Mean Rank	Chi-Square	df	p
Locomotor	Pretest	7	30.4	6.1	1.0	13.000	2	,002*
	Posttest	7	45.1	2.2	2.2			
	Permanent test	7	46.0	2.0	2.7			
Nesne Control	Pretest	7	24.8	5.8	1.0	13.000	2	,002*
	Posttest	7	40.2	1.7	2.2			
	Permanent test	7	41.5	1.9	2.7			
Total Scale	Pretest	7	76.0	17.0	1.0	12.000	2	,002*
	Posttest	7	117.5	7.5	2.2			
	Permanent test	7	118.8	6.2	2.7			

*p<0.05

Table 8 shows a statistically meaningful difference between the pre-test, post-test, and permanent test scores for all sub-dimensions of motor skills of the children in the experimental group (p<0.05). Mean scores, and mean rank show that this difference favors the permanent test. According to Table 8, children's post-test-permanent test mean scores are close to each other in all sub-dimensions. Additionally, Wilcoxon Signed Ranks Test Analysis was performed to examine between which measurements there was a significant difference due to the permanent test. As a result, there was a considerable difference between the pre-test-post-test, whilst the pre-test-permanent test mean scores

of the children in the experimental group in all sub-dimensions favored the permanent test ($p<0.05$). Plus, there was no significant difference between the post-test-permanent test mean scores ($p>0.05$). Consequently, the results suggest that the play-based movement education program effectively ensured the permanence of the children's motor skills in the experimental group. In light of the related findings, the fourth hypothesis of the study was also supported and validated.

Friedman Analysis findings related to the permanent measurements of the social skills of the children in the experimental group are presented in Table 9.

Table 9. *The Friedman analysis results of the experimental group's social skills observation test*

Participant Group	Dimensions		n	$\bar{x}$	Std. Deviaion	Mean Rank	Chi Square	df	p
Teachers	Social Cooperation	Pretest	7	40.1	2.6	1.0	12.286	2	,001*
		Posttest	7	43.2	.9	2.5			
		Permanent test	7	43.1	.8	2.3			
	Social Independence and Social Acceptance	Pretest	7	25.4	4.5	1.1	11.474	2	,003*
		Posttest	7	24.0	3.6	2.5			
		Permanent test	7	24.0	3.5	2.3			
	Communication	Pretest	7	86.8	5.5	1.0	13.040	2	,001*
		Posttest	7	104.2	2.9	2.2			
		Permanent test	7	105.1	3.4	2.7			
Parents	Social Cooperation	Pretest	7	38.0	5.4	1.0	13.040	2	,001*
		Postest	7	41.8	2.3	2.2			
		Permanent test	7	43.1	1.5	2.7			
	Social Independence and Social Acceptance	Pretest	7	26.7	3.2	1.0	12.250	2	,002*
		Posttest	7	30.0	2.2	2.1			
		Permanent test	7	31.0	2.0	2.7			
	Communication	Pretest	7	84.7	4.9	1.0	12.074	2	,002*
		Posttest	7	101.4	4.5	2.2			
		Permanent test	7	102.5	4.5	2.7			

*p<0.05

Table 9 indicates a significant difference was found between the pre-test-post-test-permanent test scores of all sub-dimensions of the social skills of the children in the experimental group ($p<0.05$). The mean scores, and mean rank collectively point this difference in favor of the permanent test. Table 9 suggests that children's post-test-permanent test mean scores were close to each other in all sub-dimensions. In this regard, Wilcoxon Signed Ranks Test Analysis was performed to examine between which measurements there was a significant difference as a result of the permanent test. As a consequence, there revealed a significant difference between the pre-test-post-test and pre-test-permanent test mean scores of the children in the experimental group in all sub-dimensions in favor of the permanent test ($p<0.05$). In contrast, no significant difference was observed between the post-test-permanent test mean scores ($p>0.05$). Drawing from these findings, it can be concluded that the play-based movement education program was effective in ensuring the permanence of the social skills of the children in the experimental group. In light of the related findings, the fifth hypothesis of the study was affirmed.

DISCUSSION AND CONCLUSION

The outcomes of this study revealed that the play-based movement education program implemented for eight weeks supported the development of motor development and social skills of the children in the experimental group. Conversely, there was no significant difference between the motor development and social skills pretest-posttest scores of the children in the control group who continued their daily in-class education. The results are in accordance with other studies in the literature. Various studies in the literature show that play-based education programs carried out in the preschool period have a substantial effect on children's motor development and social skills (Çelebi et al., 2018; Palmer et al., 2019; Rajović et al., 2016; Ruiz-Esteban et al., 2020). The other findings of show that during the eight-week experimental process, the number of steps the children in the experimental group took during the activities in the play-based movement education program was significantly higher than those of the children in the control group. In addition, it was revealed that the number of steps taken by the children

in the experimental group in outdoor activities was significantly higher than the number of steps they took in the same activities held in the classroom. In this context, it is seen that play-based movement activities are effective on the physical activities of sedentary children. Step count is an essential indicator for individuals with a sedentary lifestyle (Briseno & Smith, 2014). On the other hand, there are many other relevant studies in the literature measuring physical activity through step count (Bravata et al., 2007; Ertekin, 2018; Mendoza et al., 2015; Taşbilek Yoncalık, 2016). Physical activity plays an indispensable role in children's growth and development. Children participate in physical activities through structured and unstructured play activities from early years. Therefore, preschool age is particularly critical for developing children's physical activity habits (Ward et al., 2010). Supporting physical activities from earlier years is very beneficial for children's motor development and all other developmental areas (Sun et al., 2010). Hence, children should be provided with appropriate, fun, active activity opportunities to support their early development (Strong et al., 2005). Activities that support movement skills support children's physical, cognitive, and social development and also provide children with skills that can lay the foundation for an active lifestyle (Aminian & Hinckson, 2012; Cools et al., 2011; Deli et al., 2006; Lubans et al., 2010). Both classroom and outdoor areas should be used as educational settings to develop these skills. Outdoor areas, in particular, allow children to move freely by offering them more space and opportunities to be active compared to indoor areas. For this reason, outdoor areas significantly increase children's physical activity levels (Bento & Dias, 2017; McClintic & Petty, 2015; Stone & Faulkner, 2014). The results obtained from this study support the relevant literature. This study concluded that active play activities increased children's step counts. Plus, outdoor play activities provided a tremendous increase in children's step counts compared to play activities carried out in the classroom. This is because the outdoors allows children to move freely and enjoy a more expansive space than indoors. Nevertheless, it is essential to remark that active play activities are also carried out in the classroom. The study also showed that the active activities carried out in the classroom significantly increased the number of steps the children in the experimental group. On the other hand, four weeks after the posttests permanent test was administered to the children in the experimental group. The permanent test results indicated that the motor and social skills acquired by the children in the experimental group were persistent. In related studies, it has been revealed that play-based activities applied for eight weeks provide permanence in the motor and social skills of preschool children (Çelebi et al., 2018; Livonen et al., 2011; Öztürk & Alpay, 2020).

The study reveals that children in the preschool period spend a significant amount of time on sedentary activities, while their engagement in physical activities is low. In this context, it is believed that efforts should be increased from early years to prevent a sedentary lifestyle in children and to support their physical activities and movement skills. Collaborative initiatives between different institutions and organizations are recommended to implement educational programs and various exercises that support children's physical activities in suitable educational, health, and sports centers for all age groups. The study included a play-based movement education program that was conducted both outdoors and within classroom settings. It emphasizes the importance of incorporating such activities not only in outdoor spaces but also within the classroom. Accordingly, preschool teachers are advised to integrate more movement activities into their daily educational routines and to balance the use of outdoor and indoor environments in the planning and implementation of these activities. Teachers can enhance school-home cooperation on this topic and increase parental awareness by promoting family involvement in active activities. Additionally, creating family newsletters can serve as a guide for parents in this regard. The study found that children, particularly, spend a considerable amount of time on screen-based activities. Therefore, reducing screen time for children is essential. To achieve this, it is recommended to decrease the number of technological devices at home and instead increase the duration of quality time spent with children. Starting from early years, parents should ensure that children do not have their own mobile phones, tablets, or computers. Furthermore, measures should be taken to encourage children to engage in activities that involve their own physical effort. In the study, it was identified that the children in the study group did not regularly participate in any activity that required physical effort. As a result, parents are advised to encourage their children to participate in various courses that involve physical activities.

Sedanter 5 Yaş Çocukların Gelişimlerinin Desteklenmesinde Oyun Temelli Hareket Eğitim Programının Etkisi[2]

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Özet

Çalışmada açık alanda ve sınıf içinde uygulanan oyun temelli hareket eğitim programının sedanter 5 yaş grubu çocukların motor gelişimi, adım sayısı üzerinden fiziksel aktiviteleri ve sosyal becerilerinin gelişimi üzerindeki etkisinin incelenmesi amaçlanmıştır. Araştırmada öntest-sontest kontrol gruplu deneysel desen kullanılmıştır. Araştırmanın çalışma grubu, Bilecik ilinde okul öncesi eğitimine devam eden sedanter 5 yaş grubu 12 çocuktan (7 deney, 5 kontrol) oluşmaktadır. Araştırmanın deneysel işlem süreci, toplam 8 haftayı kapsayan kesintisiz dörder haftalık iki aşamayı kapsamaktadır. Deney grubundaki çocuklara, oyun etkinliklerini içeren hareket eğitim programı açık alanda ve sınıf içinde uygulanırken, kontrol grubu aynı gün ve saatlerde sınıf içi günlük etkinliklere katılmıştır. Etkinlikler sırasında, her iki gruptaki çocukların attığı adım sayıları pedometre ölçümleriyle kaydedilmiştir. Çalışmanın sonuçlarına göre, oyun temelli hareket eğitim programının deney grubundaki çocukların motor gelişimini ve sosyal becerilerini desteklediği belirlenmiştir. Kontrol grubundaki çocuklarda ise öntest ve sontest ölçümlerinde motor ve sosyal beceri puanları arasında anlamlı bir fark saptanmamıştır. Ayrıca deney grubundaki çocukların hem açık alanda (okul bahçesi) hem de sınıf içinde gerçekleştirilen etkinlikler kapsamında attıkları adım sayısının kontrol grubundaki çocukların sınıf içi günlük etkinliklerde attıkları adım sayısına göre anlamlı düzeyde daha yüksek olduğu saptanmıştır. Deneysel işlem sonrası dört hafta sonra, deney grubundaki çocukların kazandığı becerilerin kalıcılığını ölçmek amacıyla izleme testi yapılmıştır. Bu kapsamda, deney grubundaki çocukların kazandıkları becerilerin kalıcı olduğu belirlenmiştir. Sonuç olarak, çalışma ile oyun temelli hareket eğitim programının sedanter 5 yaş grubu çocukların motor gelişimi, fiziksel aktiviteleri ve sosyal becerilerinin gelişimi üzerinde olumlu etkileri olduğu ortaya konulmaktadır. Bu sonuçlar ışığında, çocukların fiziksel aktivite düzeyini artırmak ve hareket becerilerini geliştirmek amacıyla çeşitli öneriler sunulmaktadır.

Anahtar Kelimeler: *Okul öncesi eğitim, Sedanterlik, Fiziksel aktivite, Motor gelişim, Sosyal beceriler*

E-Uluslararası Eğitim Araştırmaları Dergisi

Cilt: 14, No: 6, ss. 151-171

Araştırma Makalesi

Gönderim: 2023-08-07
Kabul: 2023-11-11

Önerilen Atıf

Civelek, P & Uanık, G. (2023). Sedanter 5 yaş çocukların gelişimlerinin desteklemesinde oyun temelli hareket eğitim programının etkisi, *E-Uluslararası Eğitim Araştırmaları Dergisi,* 14 (6), 151-171. DOI: https://doi.org/10.19160/e-ijer.1339028

[2] Bu çalışma, Marmara Üniversitesi Eğitim Bilimleri Enstitüsü bünyesinde Prof. Dr. Gülden UYANIK' ın danışmanlığında "Farklı Eğitim Ortamlarında Uygulanan Oyun Temelli Hareket Eğitim Programının Sedanter 5 Yaş Çocukların Motor Gelişimleri, Fiziksel Aktiviteleri ve Sosyal Becerilerinin Gelişimine Etkisi" başlıklı doktora tez çalışmasından üretilmiştir

Genişletilmiş Özet

***Problem*:** Çocuklara zengin uyarıcı bir çevre olanağı sunarak çocukların var olan potansiyelinin gelişimini destekleyen okul öncesi eğitim, gelişimsel özelliklere ve bireysel farklılıklara uygun olarak gerçekleştirilen sistemli ve planlı bir eğitim sürecidir (Bayrak ve Bayrak Ayaş, 2018; Kuru Turaşlı, 2012; T.C. Milli Eğitim Bakanlığı [MEB], 2013). Hızlı bir büyüme ve gelişme süreci içerisinde olunan okul öncesi dönemde çocuklar sürekli olarak hareket etme ihtiyacı duymaktadır (Orhan ve Ayan, 2018; Purtaş ve Duman, 2017). Çocukların dünyayı anlamlandırma sürecinde kullandığı en temel unsurlardan biri olan hareket, dünyaya gelinen andan itibaren hayatın en önemli bir parçasını oluşturmaktadır. Anne ve bebek arasındaki ilk iletişim biçimi bile harekete dayalıdır. Bu beceriler büyüme ve gelişmeyi olumlu yönde destekleyerek çocuklara aktif olacakları bir yaşam alışkanlığı kazandırmakta, ileride oluşabilecek hastalık risklerinin azaltılmasında önemli bir rol oynamaktadır. Bu nedenle yaşamın erken yıllarından itibaren hareket becerilerinin desteklenmesi, sonraki yıllarda daha sağlıklı bir yaşamın temelini oluşturmaktadır (Çelik ve Şahin, 2013; Hui & Wang, 2004; Orhan, 2019) Ancak günümüzde birçok sebepten dolayı (kentsel alanlardaki yoğun yapılaşmalar, spor ve park alanlarının azalması, teknolojik araç kullanımının artması vb.) çocuklar vakitlerinin çoğunu iç mekândaki hareketsiz aktivitelere harcamaktadır. Bununla ilişkili olarak ise çocuklarda hareketsiz davranışlar artmakta ve çocukların fiziksel aktivite düzeyleri düşmektedir (Koçan, 2012; Mustafaoğlu vd., 2018; Stone ve Faulkner, 2014). Günümüzdeki çocukların yaklaşık otuz yıl öncesi dönemdeki çocuklara göre %40 daha hareketsiz oldukları bilinmektedir. Günümüz çağında birçok etmen (çocuk oyun alanlarının, spor ve park alanlarının azalması, yanlış beslenme alışkanlıkları, teknolojik araç kullanım süresinin artması vb.) çocukları dış mekânlar yerine iç mekân aktiviteleriyle vakit geçirmesine neden olarak çocukları sedanter bir yaşam biçimine zorlamaktadır (Bento ve Dias, 2017; Cengiz ve Doğtaş, 2015; Chantrell, 2015; Çakmak ve Koç, 2015; Dwyer et al., 2008; Koçan, 2012; Mustafaoğlu vd., 2018; Öztürk Samur vd., 2018; Pate vd., 2004; Stone ve Faulkner, 2014). Sedanterlik düşük enerji harcama ve az fiziksel aktivite ile karakterize edilmiş davranışlar (oturma, uzanma, televizyon izleme, diğer ekran temelli aktiviteler vb.) olarak tanımlanmaktadır (Hidding vd., 2017; Pate et al., 2008; Thivel et al., 2018; Tremblay et al., 2011). Başta obezite olmak üzere diyabet, kalp hastalıkları gibi birçok ciddi sağlık problemine neden olan sedanterlik, dünyada ölüme yol açan dördüncü risk faktörünü oluşturmaktadır (Can vd., 2014; WHO, 2010). Erken çocukluk yıllarından itibaren çocukların düzenli olarak fiziksel aktivitelerle ilgilenmeleri çocukların gelişimleri, sağlık ve iyi oluşlarını doğrudan etkilediği, sedanterlik nedeniyle fiziksel aktivite düzeyleri düşük olan çocukların başta hareket ve sosyal becerilerinin gelişimlerini olumsuz yönde etkileyeceği görülmektedir. Bu kapsamda erken yıllardan itibaren yaşamın sonraki dönemleri için temel oluşturacak bu becerilerin gelişiminin desteklenmesi oldukça önemlidir. Bu nedenle sadece sınıf içinde değil mekan dışı alanların da çocukların hareket becerilerini desteklemek amacıyla eğitim ortamları olarak kullanılması gerektiği görülmektedir (Hestbaek et al., 2017; Rhoades et al., 2011; Tortella et al., 2016; Trawick-Smith, 2014).

***Yöntem*:** Çalışmada farklı eğitim ortamlarında uygulanan oyun temelli hareket eğitim programının sedanter 5 yaş çocukların motor gelişimleri, adım sayıları üzerinden fiziksel aktiviteleri ve sosyal becerilerinin gelişimine olan etkisi araştırılmıştır. Bu kapsamda gerçek deneme modellerinden biri olan ön test-son test kontrol gruplu model kullanıldığı çalışma 12 sedanter çocuk ile gerçekleştirilmiştir (n_d=7, n_k=5). Çalışma grubundaki çocukların sedanterliklerini belirlemede Dünya Sağlık Örgütü (WHO), T.C. Sağlık Bakanlığı ile Türkiye Beslenme ve Sağlık Araştırması Raporu' nda belirlenen sedanterlik kriterleri kullanılmıştır (T.C. Sağlık Bakanlığı, 2014a; T.C. Sağlık Bakanığı, 2014b; WHO, 2019; WHO, 2020). Bu kapsamda deney grubundaki çocuklara 8 hafta boyunca açık alanda ve sınıf içinde olmak üzere oyun temelli hareket eğitim programı uygulanmış, kontrol grubundaki çocuklar ise sınıf içi günlük etkinliklerine devam etmiştir. Çalışma kapsamında sadece açık alanlarda değil aynı zamanda sınıf içinde de hareket eğitim programlarının uygulanmasının önemli olduğu vurgulanmak istenmiş ve bu kapsamda deneysel işlem süreci kesintisiz dörder haftalık iki ayrı sürece ayrılmıştır. İlk dört haftalık süreçte deney grubundaki çocuklara oyun temelli hareket eğitim programı okulun bahçesinde uygulanırken, ikinci dört haftalık süreçte ise aynı etkinlikler sınıf içinde gerçekleştirilmiştir. Böylece farklı eğitim ortamlarında uygulanan oyun temelli hareket etkinliklerinin etkisi deney grubu üzerinden ayrıca gözlemlenmiştir. Deneysel işlem süreci öncesinde ve sonrasında deney ve kontrol grubundaki çocuklara çalışma kapsamında kullanılan ölçme araçları uygulanmıştır. Çocukların fiziksel aktiviteleri gerçekleştirilen etkinlikler boyunca atılan adım sayıları üzerinden elde edilmiş ve bu kapsamda her iki grupta pedometre ölçümleri

geçekleştirilmiştir. Deneysel işlem süreci boyunca haftanın üç günü ve günde 1 etkinlik olacak şekilde her biri 60 dakika süren oyun temelli hareket eğitim programı deney grubundaki çocuklara uygulanmış, aynı gün ve saatlerde ise kontrol grubu sınıf içi günlük etkinliklerine devam etmiştir. Uygulama sürecinden dört hafta sonra ise kazanılan becerilerin kalıcılığını gözlemleyebilmek amacıyla deney grubundaki çocuklara kalıcılık testi yapılmıştır.

***Sonuçlar*:** Çalışmadan elde edilen sonuçlar incelendiğinde 8 hafta boyunca süren deneysel işlem sürecinin sonunda, deney grubunun motor gelişim ve sosyal becerileri puanlarında anlamlı derecede bir ielrleme olduğu, kontrol grubundaki çocukların ise bu becerilerde öntest-sontest puanları arasında anlamlı bir fark bulunmamaıştır. Çalışmadan elde edilen diğer sonuçlar incelendiğinde 8 haftalık deneysel işlem sürecinde deney grubundaki çocukların oyun temelli hareket eğitim programındaki etkinlikler süresince attıkları adım sayısının, kontrol grubundaki çocukların sınıf içi etkinliklerde attıkları adım sayısına göre oldukça yüksek olduğu görülmektedir. Bu farkın ise anlamlı olduğu gözlemlenmektedir. Ayrıca deney grubundaki çocukların açık alandak, etkinlikler boyunca attıklarıadım sayısının, sınıf içinde gerçekleştirilen aynı etkinliklerde attıkları adım sayısından da anlamlı düzeyde yüksek olduğu görülmüştür. Çalışma kapsamında da hareketli oyun aktivitelerinin çocukların adım sayılarında bir artış sağladığı bulunmuştur. Açık alanda gerçekleştirilen hareketli oyun aktivitelerinin sınıf içinde gerçekleştirilen oyun aktivitelerine göre çocukların adım sayılarında daha fazla bir artış sağladığı belirlenmiştir. Bu durumun açık alanların çocuklara özgürce hareket etme fırsatı sunması, iç mekânlara göre daha geniş bir alanı kapsaması gibi özelliklerden kaynaklandığı düşünülmektedir. Ancak hareketli oyun aktivitelerinin sınıf içinde de gerçekleştirilmesi önem taşımaktadır. Çalışmada sınıf içinde gerçekleştirilen hareketli aktivitelerin kontrol grubuna göre deney grubundaki çocukların adım sayıları üzerinde önemli bir artış sağladığı ortaya konulmaktadır. Çalışma kapsamında sontestler uygulandıktan dört hafta sonra deney grubundaki çocuklara izleme testi uygulanmıştır. Çalışmadan elde edilen sonuçlara göre deney grubundaki çocukların kazandıkları becerilerin kalıcı olduğu belirlenmiştir.

Öneriler: Çalışma kapsamında okul öncesi dönemdeki çocukların sedanter aktivitelere harcadıkları sürenin yüksek olduğu, fiziksel aktivitelerle ilgilenme sıklık ve sürelerinin ise düşük olduğu görülmektedir. Bu kapsamda çocuklarda sedanter yaşam biçiminin önlenmesi, çocukların fiziksel aktivitelerinin ve hareket becerilerinin desteklenmesi amacıyla yaşamın ilk yıllarından itibaren çeşitli uygulamaların artırılması gerektiği düşünülmektedir. Çocukların fiziksel aktivitelerini destekleyici eğitim programlarının ya da çeşitli egzersizlerin farklı kurum ve kuruluşlar işbirliğiyle uygun eğitim, sağlık ve spor merkezlerinde her yaş grubundaki çocuklar için düzenli olarak uygulanması önerilmektedir. Yapılan çalışmada hazırlanan oyun temelli hareket eğitim programı hem açık alanda hem de sınıf içinde gerçekleştirilmiştir. Bu kapsamda çalışmada sadece açık alanlarda değil aynı zamanda bu tür etkinliklere sınıf içinde de yer verilmesi gerektiğine vurgu yapılmaktadır. Bu doğrultuda okul öncesi öğretmenlerinin günlük eğitim akışı sürecinde hareket aktivitelerine daha fazla yer vermeleri; bu etkinliklerin planlanması ve uygulanması sürecinde açık alanları ve sınıf içi ortamları dengeli bir şekilde kullanmaları önerilmektedir. Öğretmenler konuya ilişkin okul-aile işbirliğini sağlamak ve ailelerin farkındalığını artırmak amacıyla hareketli aktivitelere ilişkin aile katılımı çalışmalarını artırabilir. Ayrıca aile bültenleri hazırlanarak bu konuda ailelere rehber olunabilir. Çalışmada çocukların özellikle de ekran temelli aktivitelerle vakit geçirmesi süresi oldukça yüksek bulunmuştur. Bu kapsamda çocukların ekran temelli aktivitelere harcadıkları sürenin azaltılması gerekmektedir. Bu nedenle evde bulunan teknolojik araç sayısının ve kullanım süresinin azaltılması, bunun yerine çocuk ile geçirilen nitelikli zaman süresinin artırılması önerilmektedir. Aileler erken yıllardan itibaren çocuklarının kendilerine ait cep telefonları, tablet/bilgisayar gibi teknolojik araçlarının bulunmamasına dikkat etmeli, ayrıca çocuklarının kendi araçlarıyla vakit geçirmeleri konusunda da çeşitli önlemler almalıdır. Çalışma kapsamında çalışma grubundaki çocukların düzenli olarak devam ettiği fiziksel aktiviteyi gerektirecek herhangi bir faaliyete katılmadıkları belirlenmiştir. Bu kapsamda ebeveynlere çocuklarını fiziksel aktiviteyi gerektirecek çeşitli kurslara katılmaları için teşvik etmeleri önerilmektedir.

REFERENCES / KAYNAKÇA

Agostini, F., Minelli, M. & Mandolesi, R. (2018). Outdoor Education in Italian Kindergartens: How Teachers Perceive Child Developmental Trajectories. *Front Psychol.* 12(9), 1911-1922.

Akçay, D. & Özcebe, H. (2012). Okul öncesi eğitim alan çocukların ve ailelerinin bilgisayar oyunu oynama

alışkanlıklarının değerlendirilmesi [Evaluation of computer game playing habits of children at pre-school education levels and their families]. *Çocuk Dergisi, 12*(2), 66–71. doi:10.5222/j.child.2012.066.

Alisinanoğlu, F. & Özbey, S. (2009). Anaokulu ve anasınıfı davranış ölçeğinin geçerlik ve güvenirlik çalışması [Validity and reliability study of kindergarten and kindergarten behavior scale]. *Mesleki Eğitim Dergisi, 4*(1), 173-198.

Aminian, S. & Hinckson, E. A. (2012). Examining the validity of the ActivPAL monitor in measuring posture and ambulatory movement in children. *International Journal of Behavioral Nutrition and Physical Activity*, *9*(1), 1-9. doi: 10.1186/1479-5868-9-119.

Aral, N. & Doğan Keskin, A. (2018). Ebeveyn bakış açısıyla 0-6 yaş döneminde teknolojik araç kullanımının incelenmesi [Examining 0-6 year olds' use of technological devices from parents' points of view]. *Addicta: The Turkish Journal on Addiction,* 5, 317–348. doi:10.15805/addicta.2018.5.2.0054.

Aygün Polat, E. (2017). Adölesanlarda Fiziksel Aktivite Anketi' nin Türkçe Versiyonu, Geçerlik ve Güvenirlik Çalışması. *(Yayımlanmamış Yüksek Lisans Tezi).* Gazi Üniversitesi Sağlık Bilimleri Enstitüsü, Ankara.

Bayrak, S. & Bayrak Ayaş, E. (2018). Okul öncesi eğitimde oyunun ve cimlastik dersinin çocuğun motor gelişimine etkisi [The effects of pre-school education game and gymnastic course to children's engine development]. *The Journal of Academic Social Science, 6*(77), 601-608. doi:10.16992/ASOS.14128.

Bento, G. & Dias, G. (2017). The importance of outdoor play for young children's healthy development. *Porto Biomedical Journal, 2*(5), 157-160. doi:10.1016/j.pbj.2017.03.003.

Bravata, D. M., Smith-Spangler, C., Sundaram, V., Gienger, A. L., Lin, N., Lewis, R. et al. (2007). Using pedometers to increase physical activity and improve health: a systematic review. *Jama, 298(*19), 2296-2304. doi:10.1001/jama.298.19.2296.

Briseno, G. G. & Smith, J. D. (2014). Pedometer accuracy in persons using lower-limb prostheses. *JPO Journal of Prosthetics and Orthotics*, *26*(2), 87-92. doi:10.1097/JPO.0000000000000024.

Bulca, Y., Bilgin, E. & Demirhan, G. (2020). Ortaokul Öğrencilerinin Fiziksel Aktivite Düzeylerinin Pedometre İle Değerlendirilmesi. *Spor Bilimleri Dergisi,* 31(1), 1-8.

Can, S., Arslan, E. & Ersöz, G. (2014). Güncel bakış açısı ile fiziksel aktivite [Current perspectives on physical activity]. *SPORMETRE Beden Eğitimi ve Spor Bilimleri Dergisi, 12*(1), 1-10. doi:10.1501/Sporm_0000000248.

Cengiz, T. & Doğtaş, S. (2015). İlköğretim çağındaki çocukların açık yeşil alan kullanım alışkanlıklarının belirlenmesi: Çanakkale örneği. *Journal of Tekirdağ Agricultural Faculty, 12*(2), 57-66.

Chantrell, G. (2015). Challenges, as perceived by teachers, to learning outdoors. *(Unpublished master dissertation).* Vancouver Island University, Canada.

Cools, W., De Martelaer, K., Samaey, C. & Andries, C. (2011). Fundamental movement skill performance of preschool children in relation to family context. *Journal of Sports Sciences*, *29*(7), 649-660. doi: 10.1080/02640414.2010.551540.

Çakmak, A. & Koç, K. (2015). Anaokulu Çocuklarının Televizyon, Kitap, Bilgisayar ve Oyuncaklarla Geçirdikleri Zamanın Niteliğinin İncelenmesi. *Gaziantep University Journal of Social Sciences,* 14(2), 513- 534.

Çelebi, C., Bayazıt, B., Tuncil, O. S. & Yılmaz, O. (2018). Okul öncesi dönemde hareket eğitim çalışmalarının motor gelişime etkisi. *Uluslararası Hakemli Akademik Spor, Sağlık ve Tıp Bilimleri Dergisi, 29*, 162-176.

Çelik, A. & Şahin, M. (2013). Spor ve çocuk gelişimi [Sports and child development]. *International Journal of Social Science, 6*(1), 467-478. doi:10.9761/JASSS_454.

Deli, E., Bakle, I. & Zachopoulou, E. (2006). Implementing intervention movement programs for kindergarten children. *Journal of Early Childhood Research*, *4*(1), 5-18. doi:10.1177/1476718X06059785.

Derer, A. & Mülazımoğlu Ballı, Ö. (2018). İlkokul Öğrencilerinin Motor Yeterlik Düzeylerinin Fiziksel Aktiviteye Katılım, Yaş, Cinsiyet ve Beden Kütle İndeksi İlişkisi. *Spor Bilimleri Dergisi, 29*(4), 196–204. doi: 10.17644/sbd.344697.

Duman, G. (2013). Okul Öncesi Dönemde Hareket Gelişimi ve Önemi. *Eğitimci Öğretmen Dergisi,* 20, 1-9.

Dwyer, G. M., Higgs, J., Hardy, L. L. & Baur, L. A. (2008). What do parents and preschool staff tell us about young children's physical activity: a qualitative study. *International Journal of Behavioral Nutrition and Physical Activity, 5*, 1-11. doi: 10.1186/1479-5868-5-66.

Ertekin, Y. H. (2018). Orta-yüksek yoğunluktaki fiziksel aktiviteyi ölçen üç eksenli (3D) sensör destekli pedometre kullanımının vücut kompozisyonuna etkisi: Randomize kontrollü çalışma. *Konuralp Medical Journal, 10*(1), 1-6. doi:10.18521/ktd.394699.

Gagen, L. M. & Getchell, N. (2006). Using 'constraints' to design developmentally appropriate movement activities for early childhood education. *Early Childhood Education Journal*, *34*(3), 227-232. doi: 10.1007/s10643-006-0135-6.

Harnois-Leblanc, S., Sylvestre, M. P., Van Hulst, A., Barnett, T. A., Mathieu, M. È., Mesidor, M. et al., (2023). Estimating causal effects of physical activity and sedentary behaviours on the development of type 2 diabetes in at-risk children from childhood to late adolescence: an analysis of the QUALITY cohort. *The Lancet Child & Adolescent Health*, *7*(1), 37-46.

Hestbek, L., Andersen, S. T., Skovgaard, T., Olesen, L. G., Elmose, M., Bleses, D. et al. (2017). Influence of motor skills training on children's development evaluated in the Motor skills in PreSchool (MiPS) study-DK: study protocol for a randomized controlled trial, nested in a cohort study. *Trials, 18*(1) 1-11. doi:10.1186/s13063-017-2143-9.

Hidding, L. M, Altenburg T. M., Mokkink, L.B., Terwee, C. B. & Chinapaw, M. J. M (2017). Systematic review of childhood sedentary behavior questionnaires: what do we know and what is next? *Sports Medicine, 47*(4), 677-699. doi:10.1007/s40279-016-0610-1.

Hills, A. P., King, N. A. & Armstrong, T. P. (2007). The contribution of physical activity and sedentary behaviours to the growth and development of children and adolescents. *Sports medicine*, 37(6), 533-545.

Hinkley, T., Salmon, J., Okely, A. D. & Trost, S. G. (2010). Correlates of sedentary behaviours in preschool children: a review. *International Journal of Behavioral Nutrition and Physical Activity*, 7(1), 1-10.

Hui, J. & Wang, T. (2004). A study on gross motor skills of preschool children. *Journal of Research in Childhood Education, 19*(1), 32-43. doi:10.1080/02568540409595052.

Kapıkıran, N. A., İvrendi, A. B. & Adak, A. (2006). Okul öncesi çocuklarında sosyal beceri: Durum saptaması. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi, 19*(19), 19-27.

Karakullukçu Özkan, A. (2015). Kırıkkale Üniversitesi Öğrencilerinin Fiziksel Aktivite Düzeyinin Pedometre İle Belirlenmesi. *(Yayımlanmamış Yüksek Lisans Tezi).* Kırıkkale Üniversitesi Sağlık Bilimleri Enstitüsü, Kırıkkale.

Karaman, B. & Süel, E. (2020). Okul öncesi eğitim kurumlarında oynatılan fiziksel etkinliğe dayalı oyunların psikomotor gelişim üzerine etkisi. *Beden Eğitimi ve Spor Bilimleri Dergisi, 14*(3), 529-539.

Koçan, N. (2012). Çocuk oyun alanlarının yeterliliği üzerine bir araştırma: Uşak kenti Kemalöz mahallesi örneği. *Erciyes Üniversitesi Fen Bilimleri Enstitüsü Fen Bilimleri Dergisi, 28*(4), 315-321.

Koçyiğit, S., Tuğluk, M. N. & Kök, M. (2007). Çocuğun gelişim sürecinde eğitsel bir etkinlik olarak oyun. *KKEFD, 16*, 324-342.

Kuru Turaşlı (2012). Okul Öncesi Eğitimin Tanımı Kapsamı ve Önemi. Gelengül Haktanır (Ed.). *Okul Öncesi Eğitime Giriş* içinde (s. 1-23). Ankara: Anı Yayıncılık.

Küçükibiş, H. F. & Eskiler, E. (2022). Işbirliğine dayalı oyunla öğrenme stratejileri için motivasyon ölçeği; Türkçeye uyarlama, geçerlilik ve güvenilirlik çalışması. *E-Uluslararası Eğitim Araştırmaları Dergisi,* 13(4), 79-98.

Livonen, S., Sääkslahti, A. & Nissinen, K. (2011). The development of fundamental motor skills of four-to five-year-old preschool children and the effects of a preschool physical education curriculum. *Early Child Development and Care, 181*(3), 335-343. doi:10.1080/03004430903387461.

Lubans, D. R., Morgan, P. J., Cliff, D. P., Barnett, L. M. & Okely, A. D. (2010). Fundamental movement skills in children and adolescents. *Sports medicine*, *40*(12), 1019-1035. doi: 10.2165/11536850-000000000-00000.

McClintic, S. & Petty, K. (2015). Exploring early childhood teachers' beliefs and practices about preschool outdoor play: A qualitative study. *Journal of Early Childhood Teacher Education*, *36*(1), 24-43. doi:10.1080/10901027.2014.997844.

Mendoza, L., Horta, P., Espinoza, J., Aguilera, M., Balmaceda, N., Castro, A. et al. (2015). Pedometers to enhance physical activity in COPD: A randomised controlled trial. *European Respiratory Journal, 45*(2), 347-354. doi:10.1183/09031936.00084514.

Milli Eğitim Bakanlığı [MEB] (2015). Çocuk Gelişimi ve Eğitimi 0-72 Ay Motor Gelişim. Milli Eğitim Bakanlığı Yayınları, Ankara. Retrieved from http://orgm.meb.gov.tr/psikososyaldijitaldestek/pdf/fizikselgelisim.pdf

Miranda, N., Larrea, I., Muela, A. & Barandiaran, A. (2017). Preschool children's social play and involvement in the outdoor environment. *Early Education and Development*, 28(5), 525-540.

Monti, F., Farné, R., Crudeli, F., Agostini, F., Minelli, M. & Ceciliani, A. (2019). The role of Outdoor Education in child development in Italian nursery schools. *Early Child Development and Care,* 189(6), 867-882.

Mustafaoğlu, R., Zirek, E., Yasacı, Z. & Özdinçler, A. R. (2018). Dijital teknoloji kullanımının çocukların gelişimi ve sağlığı üzerine olumsuz etkileri. *Addicta: The Turkish Journal on Addictions, 5*(2), 1-21. doi:10.15805/addicta.2018.5.2.0051.

Orhan, R. & Ayan, S. (2018). Psiko-motor ve gelişim kuramları açısından spor pedagojisi. *Kırıkkale Üniversitesi Sosyal Bilimler Dergisi, 8*(2), 523-540.

Orhan, R. (2019). Çocuk gelişiminde fiziksel aktivite ve sporun önemi [The importance of physical activity and sports in child development]. *Kırıkkale Üniversitesi Sosyal Bilimler Dergisi,* 9(1), 157-176.

Özkan, B. (2017). Anne görüşlerine göre 5-6 yaş çocukların bilgisayar/tablet kullanım düzeyleri. *The Journal of Academic Social Science, 5*(54), 390-399. doi:10.16992/ASOS.12893.

Öztürk, E. & Alpay, C. B. (2020). Okul öncesi eğitim kurumuna devam eden 48-60 aylık çocuklarda egzersiz programının vücut kompozisyonu ve esnekliğe etkisi. *GERMENİCA Beden Eğitimi ve Spor Bilimleri Dergisi, 1*(1), 1-17.

Palmer, K. K., Chinn, K. M. & Robinson, L. E. (2019). The effect of the CHAMP intervention on fundamental motor skills and outdoor physical activity in preschoolers. *Journal of Sport and Health Science, 8*(2), 98-105. doi:10.1016/j.jshs.2018.12.003.

Pate, R. R., O'neill, J. R. & Lobelo, F. (2008). The evolving definition of" sedentary". *Exercise and Sport Sciences Reviews*, *36*(4), 173-178. doi:10.1097/jes.0b013e3181877d1a.

Purtaş, Ö. & Duman, G. (2017). Okul öncesi dönem çocuklarına yönelik hareket etkinliği parkurlarının incelenmesi. *Social Sciences Studies Journal, 3*(10), 1366-1372. doi:10.26449/sssj.152.

Rajović, R., Berić, D., Bratić, M., Živković, M. & Stojiljković, N. (2016). Effects of an "NTC" exercise program on the development of motor skills in preschool children. *Facta Universitatis, Series: Physical Education and Sport, 14*(3), 315-329. doi:10.22190/FUPES1603315R

Rhoades, B. L., Warren, H. K., Domitrovich, C. E. & Greenberg, M. T. (2011). Examining the link between preschool social–emotional competence and first grade academic achievement: The role of attention skills. *Early Childhood Research Quarterly, 26*(2), 182-191. doi:10.1016/j.ecresq.2010.07.003

Ruiz-Esteban, C., Terry Andrés, J., Méndez, I. & Morales, Á. (2020). Analysis of motor intervention program on the development of gross motor skills in preschoolers. *International Journal of Environmental Research and Public Health, 17(*13), 1-12. doi:10.3390%2Fijerph17134891

Savaşhan, Ç., Erdal, M., Sarı, O. & Aydoğan, Ü. (2015). İlkokul çağındaki çocuklarda obezite görülme sıklığı ve risk faktörleri. *Türkiye Aile Hekimliği Dergisi, 19*(1), 14-21. doi: 10.17942/sted.551556

Stone, M. R. & Faulkner, G. E. (2014). Outdoor play in children: Associations with objectively-measured physical activity, sedentary behavior and weight status. *Preventive Medicine, 65,* 122-127. doi:10.1016/j.ypmed.2014.05.008

Strong, W. B., Malina, R. M., Blimkie, C. J., Daniels, S. R., Dishman, R. K., Gutin, B. et al. (2005). Evidence based physical activity for school-age youth. *The Journal of Pediatrics*, *146*(6), 732-737. doi: 10.1016/j.jpeds.2005.01.055

Sun, S. H., Zhu, Y. C., Shih, C. L., Lin, C. H. & Wu, S. K. (2010). Development and initial validation of the preschooler gross motor quality scale. *Research in Developmental Disabilities, 31*(6), 1187-1196. doi: 10.1016/j.ridd.2010.08.002

Taşbilek Yoncalık, M. (2016). Öğretmen adaylarının fiziksel aktivite seviyelerinin belirlenmesi. *Niğde Üniversitesi Beden Eğitimi ve Spor Bilimleri Dergisi, 10*(1), 40-50.

T.C. Milli Eğitim Bakanlığı [MEB] (2013). Okul öncesi eğitim programı. Ankara: Milli Eğitim Bakanlığı Temel Eğitim Genel Müdürlüğü.

T.C. Sağlık Bakanlığı (2014a). Türkiye beslenme ve sağlık araştırması raporu 2010 Ankara: Türkiye Halk Sağlığı Kurumu, Sağlık Bakanlığı, Yayın No: 931.

T.C. Sağlık Bakanlığı (2014b). Türkiye fiziksel aktivite rehberi-Çocuk ve ergenlerde fiziksel aktivite. Ankara: Türkiye Halk Sağlığı Kurumu, Sağlık Bakanlığı Yayın No: 940.

Tepeli, K. (2007). *Büyük kas becerilerini ölçme testi (BüKBÖT)'nin Türkiye standardizasyonu*. Yayımlanmamış Yüksek Lisans Tezi. Konya: Selçuk Üniversitesi Sosyal Bilimler Enstitüsü.

Thivel, D., Tremblay, A., Genin, P. M., Panahi, S., Rivière, D. & Duclos, M. (2018). Physical activity, inactivity, and sedentary behaviors: definitions and implications in occupational health. Frontiers in public health, *6*(288*)*, 1-5. doi:10.3389/fpubh.2018.00288

Tortella, P., Haga, M., Loras, H., Sigmundsson, H., & Fumagalli, G. (2016). Motor skill development in Italian pre-school children induced by structured activities in a specific playground. *PLoS ONE, 11*(7), 1-15. doi:10.1371/journal.pone.0160244

Trawick-Smith, J. (2014). The physical play and motor development of young children: A review of literature and implications for practice. Retrieved from https://www.easternct.edu/center-for-early-childhood-education/about-us/publications-documents/benefits-of-play-lit-review.pdf

Tremblay, M.S., LeBlanc, A. G., Kho, M. E., Saunders, T. J., Larouche, R., Colley, R. C. et al. (2011). Systematic review of sedentary behaviour and health indicators in school-aged children and youth. *International Journal of Behavioral Nutrition and Physical Activity*, *8*(1), 1-22. doi:10.1186/1479-5868-8-98.

Tucker, P. (2008) The Physical Activity Levels of Preschool-Aged Children: A Systematic Review. *Early Childhood*

Research Quarterly, 23(4), 547–558.

Uhls, Y. T., Michikyan, M., Morris, J., Garcia, D., Small, G. W., Zgourou, E. et al. (2014). Five days at outdoor education camp without screens improves preteen skills with nonverbal emotion cues. *Computers in Human Behavior*, 39, 387-392.

Ulutaş, A., Demir, E., & Yayan, E. H. (2017). Motor gelişim eğitim Ppgramının 5-6 yaş çocukların kaba ve ince motor becerilerine etkisinin incelenmesi. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi*, *17*(3), 1523-1538. doi:10.17240/aibuefd.2017.17.31178-338846.

Ward, D. S., Vaughn, A., McWilliams, C., & Hales, D. (2010). Interventions for increasing physical activity at child care. *Medicine and Science in Sports and Exercise, 42*(3), 526-534. doi:10.1249/mss.0b013e3181cea406.

World Health Organization [WHO] (2010). Global recommendations on physical activity for health. Retrieved from https://apps.who.int/iris/bitstream/handle/10665/44399/9789241599979_eng.pdf;sequence=1

World Health Organization [WHO] (2019). Guidelines on physical activity, sedentary behaviour and sleep for children under 5 years of age. Retrieved from https://apps.who.int/iris/bitstream/handle/10665/311664/9789241550536-eng.pdf?sequence=1veisAllowed=y

World Health Organization [WHO] (2020). WHO guidelines on physical activity an sedentary behaviour. Retrieved from https://www.who.int/publications/i/item/9789240015128

Yarımkaya, E. & Ulucan, H. (2015). Çocuklarda Hareket Eğitimi Programının Motor Gelişim Üzerine Etkisi. *International Journal of New Trends in Arts, Sports &Science Education*, 4(1), 37-48.

Zeng, N., Ayyub, M., Sun, H., Wen, X., Xiang, P. & Gao, Z. (2017). Effects of Physical Activity on Motor Skills and Cognitive Development in Early Childhood: A Systematic Review. *BioMed Research International,* 2017, 1-17.