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Student physical activity, lesson context, and teacher behaviour in preschool movement activity practices *

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Abstract

Physical activity greatly enhances preschool children's overall development (physical, psychological, social, academic, etc.). Therefore, it is important to identify what is happening in the learning environments of preschool children in physical activity practices, who spend a significant part of their day in a controlled and planned environment within a school setting. Given this importance, this study aimed to compare students' levels of physical activity, types of physical activity, curricular lesson context/content, and teachers' involvement and teacher promotion in preschool Movement Activity practices in public and private preschools in Türkiye. The study involved 50 female preschool teachers, 23 working in public schools and 27 in private schools, selected by convenience sampling. Data were collected using the System for Observation of Physical Education Lessons and the System for Observation of Physical Education Lessons for Preschoolers. The results showed that children in both public and private schools spent most of their practice time sitting (public 49.22%, private 47.88%) and standing (public 39.80%, private 42.54%) during Movement Activity practices included in the preschool curriculum. It was also observed that in most of the practice time during the movement activities, the type of physical activity was lying/sitting/standing/squatting (public 81.8%, private 84.27%), the context/content of the practices was gameplaying (public 73.68%, private 63.59%), the teachers' behavior was observing (public 63.58%, private 71.54%), and the teachers' interaction did not include promoting physical activity/fitness/motor skills in and out of class. In light of these findings, it is essential to conduct further research and make necessary adjustments to preschool teacher training programs and preschool curricula, which are far from achieving the preschool physical activity goals, to identify possible reasons for preschool children's inactivity and teachers' behaviors and practice content that keep students inactive.

Keywords

Preschool education
Movement activities
Physical activity
Systematic observation
SOFIT-P

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Introduction

The foundation of a country's future lies in its social and economic development and in raising productive, responsible, and healthy individuals in every aspect, so investing in and nurturing individuals with these qualities is paramount (Adams, 2002; Reynolds et al., 2011). Human development begins before birth and is shaped by life experiences from birth to death. Early experience plays a vital role in developing lifelong learning, attitudes, and physical and mental health. It is also crucial for language, cognition, socio-emotional, and regulatory development and is a marker for later success in different domains (Bakken et al., 2017). A strong foundation early in life increases the probability of positive outcomes, while a weak foundation increases the likelihood of difficulties later in life (Center on the Developing Child, 2010). Research indicates that movement is vital for life, especially for young children. Young children both experience and are the focus of early learning through movement. As children develop neuromuscular control, they can comprehend the physical world and express what they understand non-verbally. Children learn about their surroundings through movement with an unquenchable curiosity. Allowing children to move enables them to make discoveries and gather crucial information about their world. Through movement, children also develop the thinking and physical skills needed to navigate nature and the world, adapting to their environment. Motor skills undergo significant development during this period, establishing the groundwork for success in various other developmental areas, such as language, cognition, and physical and social development (Gandotra et al., 2023; Iverson, 2010; Riggs, 1980).

Like the family, the school is an important resource in ensuring the overall well-being of children. Schools help facilitate this development by providing planned learning opportunities for all students. This development is being implemented through the curriculum. When this study was conducted, schools in Türkiye were using the preschool curriculum that has been implemented since 2013. However, it is worth mentioning that while writing this article, the preschool curriculum was updated (Ministry of National Education [MoNE], 2024). Intending to ensure children's holistic development, the Ministry of National Education (MoNE) in Türkiye has defined five developmental areas (cognitive, linguistic, social and emotional, motor and self-care) and acquisitions for children in three different age groups (36–48, 48–60, and 60–72 months) within the preschool curriculum that has been implemented since 2013 (MoNE, 2013). Within these developmental areas, five main acquisitions have been identified for children's motor development, which is also the focus of this study. These acquisitions are related to locomotor movements (e.g., warming up, cooling down, running, jumping, skipping, climbing), balance movements (e.g., moving along a line, standing on one foot), movements that require object control (e.g., kicking a ball with the foot, rolling a ball with the hand, throwing objects to a target), movements that require fine motor skills (e.g., collecting objects, stacking objects), and movements that involve music and rhythm (e.g., making dance steps, dancing to music). The curriculum aims to develop children's basic movement skills through recommended movement activities to achieve motor development gains, ensure lifelong participation in physical activity, develop children's physical and motor literacy, perceptual-motor development, and movement skills such as displacement, object control, and balance, and contribute to the children's physical, motor, cognitive, language, social and emotional development, and self-care skills. In short, physical and motor activities in the preschool curriculum aim to develop children's basic movement skills, body awareness, motor skills (strength, coordination, speed, and agility), and physical skills (flexibility, strength, and endurance) (MoNE, 2013). Preschool children's failure to achieve the levels of performance set by the MoNE in these areas of motor development can lead to problems that negatively impact childhood and later adult life.

It is often stressed in the literature that motor development, which is also a focus of MoNE, is not only related to the children's development towards movement. Research has shown that even in newborn babies, movements are not just reflexes; motor development is not just about learning to control muscles; motor development is at the heart of human development and reflects all the different aspects of human development, including perception, planning, and motivation (Von Hofsten, 2004),

and motor experiences in early childhood have also been reported to relate to cognitive, social or perceptual development (Bushnell & Boudreau, 1993). It has also been argued that motor development should be considered from a broader perspective. This is because the brain and body are biologically inseparable and have properties that adapt to the environmental contexts in which individuals live (Gabbard et al., 2009). The literature provides a substantial body of evidence to suggest that motor development is a lifelong process, continuing beyond childhood and into adulthood. This evidence suggests that interventions aimed at improving motor skills can be effective throughout various life stages.

The importance of motor development in children is also evident concerning the concept of obesity. Obesity has been defined as one of the significant public health problems of the 21st century (World Health Organization [WHO], 2020), and the statistics on childhood obesity are alarming. According to 2020 statistics, 340 million children and adolescents aged 5–19 years worldwide are classified as overweight or obese (WHO, 2021). Childhood obesity statistics in 2030 predict that China, India, and America will be in the top three in terms of the number of obese children, and Türkiye will be in the 13th place, indicating that the critical threshold has been reached in Türkiye (World Obesity Federation [WOF], 2019). Obesity, defined as an abnormal or excessive and life-threatening accumulation of fat, is a major risk factor for many non-communicable diseases, such as cardiovascular disease, musculoskeletal disorders, and some cancers in adulthood (WHO, 2021), and in childhood, being overweight or obese has risk factors for physical (i.e., diabetes, asthma, cardiovascular disease, high cholesterol, orthopedic problems), psychological (i.e., low self-esteem/confidence, body image), social (i.e., discrimination, isolation) and academic (i.e., school absenteeism, poor performance) problems (Sahoo et al., 2015; Schwimmer et al., 2003). Increased consumption of energy-dense foods high in fats and sugars, increased physical inactivity associated with sedentary lifestyles, changes in transportation patterns, and increased urbanization have contributed to obesity and overweight and their associated health consequences, which are largely preventable through regular physical activity and a healthy diet (WHO, 2021). Despite this, statistics show that people of all ages around the world do not get enough physical activity, which makes a significant contribution to their overall health and is one of the cheapest and most accessible ways to prevent diseases associated with inactivity (Aubert et al., 2021; Guthold et al., 2018; Guthold et al., 2020).

Preschool children are expected to develop basic motor skills such as running, jumping, throwing, and catching and engage in physical activity through Movement Activity practices in the preschool curriculum (MoNE, 2013). The development of these skills can only be achieved if children are physically active. Indeed, the literature reports an association between physical activity and motor skills, with children with high levels of physical activity also having high levels of motor skills (Dapp et al., 2021; Figueroa & An, 2017; Martínez-Bello & Estevan, 2021; Williams et al., 2008). In addition, there is evidence in the literature that the acquisition of physical activity habits in the early years of life may be an important determinant of physical activity later in life (Hnatiuk et al., 2012). However, physical activity and motor skills, which are so important for a child's overall physical, psychological, and social development, are not something that a child can do on their own at every stage of their life (Ali et al., 2017). While policymakers need to take a broader approach to achieving this goal by enacting nationwide laws and regulations, it is the schools where children spend a significant part of their day that provide the necessary environment and facilities for children to be physically active. Educational programs in schools, particularly physical education programs, help children become accustomed to participating in physical activity. MoNE (2013) recommends that to achieve motor skill development in the preschool curriculum, Movement Activities should last for at least 30 minutes, with the first 5 minutes for warm-up games and 20 minutes for reviewing previous practice and learning new basic movement skills. The WHO also stresses that preschoolers should get at least 180 minutes of a variety of physical activities of all intensities, including at least 60 minutes of moderate-to-vigorous physical activity spread throughout the day. Sedentary time, especially time spent in front of screens for entertainment, should be limited, and physical activity should be increased (WHO, 2019).

Despite all these suggestions, research focusing on preschool physical activity in schools shows that preschool physical activity levels are low (Hinkley et al., 2012; Tucker, 2008). Specifically, a systematic observation of preschools in Hong Kong examined the physical activity levels of students in physical education classes and found that students spent 12.3% of class time sitting, 37.6% of class time standing, and 30.3% of class time walking (Chow et al., 2015a). In the same study, 43.8% of instructional time was spent on skill practice, 19.5% on class management, 14.5% on fitness development, 10% on free play, 7.1% on knowledge, and 5.1% on gameplay. Results from the same study on teacher behavior showed that teachers spent 46.5% of their physical activity class time managing students and the instructional environment, 25.4% observing, 21.2% promoting and demonstrating fitness, and 6.7% providing general instruction. Another study that systematically observed physical education classes found that students spent 27.8% of the class time sitting, 23.4% standing, and 27.7% walking in physical education classes in Belgian kindergartens (Van Cauwenberghe et al., 2012). Regarding course content, the same study found that 41.7% of physical education class time was spent on skill practice, 18.3% on knowledge content, 17.9% on general content, 11.7% on gameplay, and 10.4% on fitness activities. The same study also found that the teacher instructed 49.1%, managed 23.2%, demonstrated 13%, and promoted 11.1% of physical education class time.

Assessing the physical activity levels of preschool children in school is essential because the activity habits and levels established during this formative period can significantly influence long-term physical activity patterns and overall health outcomes in adulthood. This early assessment plays a critical role in promoting a healthier society by establishing positive physical activity habits from a young age (Batista et al., 2019). Research has shown that participating in physical activity and sports during childhood and adolescence is strongly associated with maintaining high levels of physical activity in old age (Hirvensalo et al., 2000; Telama et al., 2005). As mentioned above, consistent physical activity plays a crucial role in promoting overall growth and development. It offers a wide range of benefits for physical, mental, and psychosocial well-being at all ages. In particular, targeted physical activity initiatives during early development have been shown to improve psychosocial outcomes significantly. These outcomes include improvements in self-concept, social behavior, goal orientation, and, importantly, self-efficacy. It is worth noting that these elements are important determinants of an individual's current and future participation in physical activity, particularly as they move into older age groups (Kohl & Cook, 2013).

Given that physical inactivity is ranked by the WHO (2009) as the fourth leading risk factor for global mortality and is estimated to cause 3.2 million deaths worldwide each year, physical activity habits from childhood to adulthood will also make a significant contribution to reducing the health expenditure needed to prevent these deaths. To take future precautions, it is important to determine whether children are physically active, as recommended by the MoNE curriculum (Goldfield et al., 2012; MoNE, 2013; Pica, 2011). Progress can be made if all actors and stakeholders are committed to working together toward the common goal of eliminating childhood obesity. In this respect, the findings of this study will make a significant contribution to both the knowledge of the physical activity status, the formulation of future policies and regulations, the country's physical activity policy for schools, and the almost non-existent literature in Türkiye. Furthermore, because the majority of research on this topic consists of statement-based research, it is even more important to uncover physical activity and motor development practices in the preschool years through systematic observation.

As the literature highlights school characteristics as an important factor in students' physical activity and motor skill development, this study aimed to fill a gap in the literature by comparing public and private schools and providing insights into possible differences between schools. School characteristics have been emphasized in the literature as one of the important factors affecting the physical activity levels of preschool children in physical education classes, and this emphasis led the study to be conducted in public and private schools, which were estimated to have different physical

structures and facilities based on the literature. The literature on comparing public and private preschool education has highlighted that there are similarities in implementing the official policies set by the educational authorities but also differences based on school facilities (Rentzou, 2014; Sitati et al., 2016). For example, Cardon and De Bourdeaudhuij (2008) examined factors influencing preschool children's physical activity levels and found that characteristics such as playground equipment, playground size, and whether playground equipment was fixed or mobile influenced children's physical activity levels. In addition, the literature has identified limited indoor and outdoor mobility in preschool settings and a lack of physical activity equipment as factors that encourage or limit children's physical activity (Dowda et al., 2009; Finn et al., 2002; Pate et al., 2008). The main barriers to children's experiences of physical activity in preschool settings identified in several studies also include insufficient time, limited educational opportunities and resources, and individual characteristics of school staff (Macdonald et al., 2021). In addition, the lack of open space and suitable environments for physical activity in preschool settings, the inflexibility of the school day, and the emphasis on academic activities that require children to sit for long periods have also been reported as barriers to physical activity (Coelho & Tolocka, 2020). Although the standards of preschool education are set by MoNE regulations that must be implemented throughout the country, there are differences between preschool institutions in terms of various factors that can have an impact on intended outcomes. According to numerous national studies, most of which were conducted in public preschools, the challenges faced by preschools closely mirror those identified in international studies (Dowda et al., 2004; Lea & Polster, 2010). These challenges include difficulties in maintaining and repairing school facilities, inadequate auxiliary staff, high student-to-teacher ratios, insufficient funding, limited space and classrooms, lack of necessary materials and equipment, absence of outdoor areas such as gardens and playgrounds, inadequate restroom and handwashing facilities; heating and lighting issues; cramped classroom sizes that restrict movement during activities; and difficulties in acquiring materials and toys for instructional use (Can & Kılıç, 2019; Micozkadıoğlu & Berument, 2011; Sabancı et al., 2018; Yıldız, 2018). Eroğlu and Şimşek (2021) have emphasized the importance of a high-quality preschool education being situated within an environment characterized by optimal physical conditions and enriched facilities. Nevertheless, they have identified the difficulties faced by preschool institutions in Türkiye in meeting these essential conditions. Research findings consistently demonstrate that there exists a direct correlation between the quality of educational institutions and the developmental outcomes of children. Specifically, studies have shown that as the quality of the learning environment improves, so do children's language-cognitive abilities, fine motor skills, gross motor skills, and self-care social development. This underscores the critical role that the educational setting plays in shaping the holistic development of children (Canbeldek & Işıkoğlu Erdoğan, 2016).

In light of the national and international literature on the subject that has been analyzed above, this study aimed to find out what is happening in preschool activities concerning movement and to elucidate the physical activity practices of children in preschool settings. In particular, this study aimed to compare the levels of physical activity by students, the types of physical activity that they engaged in, the curricular lesson context and content, and the involvement and promotion of physical activity by teachers between public and private preschools.

Method

Research Model

A descriptive correlational quantitative observational design was used in this study to compare student physical activity level, student physical activity type, curricular lesson context/content, teacher involvement, and teacher interactions in public and private preschool Movement Activities practices. Correlational studies focus on the study of variables in a mostly natural setting, their identification, and the establishment of relationships between them, without implying that these relationships may be cause-and-effect relationships between any of these variables (Fraenkel et al., 2012).

Participants

The study was conducted with 50 female preschool teachers who were chosen through convenience sampling (Fraenkel et al., 2012) from schools in the central districts of Şanlıurfa, Türkiye. The criteria for selection were that they were working in schools that were easily accessible to the researcher and that were female. The reason for including only female teachers in this research was that the majority of teachers working in preschool institutions in Türkiye were female, so a gender comparison would not have been possible due to the limited number of male teachers. No criteria, such as school characteristics, teacher characteristics, etc., were taken into account in the selection of public and private schools. However, based on research findings in the literature, it was assumed that private preschool institutions have more physical facilities and are more developed than public schools. Of the 50 participating teachers, 23 were public school teachers, and 27 were private school teachers. The mean age of public school teachers was 33.57 (SD=5.43) years, compared to 29.07 (SD=3.74) years for private school teachers. While the average number of years of teaching experience of public school teachers was 8.96 (SD = 4.69), that of private school teachers was 5.19 (SD = 3.66). A total of 200 students were observed. Of these, 92 students (46 girls and 46 boys) were studying in public schools, and 108 students (54 girls and 54 boys) were in private schools. The study did not ask about the age of the children. However, according to the Basic Law on National Education, the typical age range for students in preschool institutions in Türkiye is between 5 and 6 years. Children who have not yet reached the starting age for primary school are allowed to attend preschool educational institutions, although it is not compulsory to do so (Milli Eğitim Temel Kanunu, 1973). While the average duration of Movement Activity practices in the 23 public schools observed in the study was 23.41 minutes (SD = 9.51), in the 27 private schools, it was 20.47 minutes (SD = 9.07).

Data Collection Instruments

System for Observing Fitness Instruction Time (SOFIT) for Preschoolers (SOFIT-P)

The research used a tool called the System for Observing Fitness Instruction Time for Preschoolers (SOFIT-P) (Sharma et al., 2011). This is an adapted version of the System for Observing Fitness Instruction Time (SOFIT) developed by McKenzie (2005). This tool measures student engagement in physical activity, the curricular lesson context/content, teacher involvement, and teacher interactions related to physical activity promotion in school physical education. SOFIT-P has been modified to include the categories of student physical activity level, physical activity type, indoor classroom context, and outdoor classroom context categories. However, only the physical activity level and physical activity type categories were used in the current study because the indoor classroom context and outdoor classroom context categories focus on course content other than physical activity/movement (Sharma et al., 2011). In addition, this study used the original SOFIT categories of curricular Lesson Context/Content, Teacher Involvement, and Teacher Interactions in addition to the SOFIT-P categories of Physical Activity Level and Physical Activity Type. The 5 categories and the 27 subcategories that belong to these 5 basic categories and are included in the tool used in the research are shown in Figure 1. The researchers reported that the SOFIT-P, an adaptation of the SOFIT, is a feasible, reliable, and valid method of measuring the amount and type of physical activity in children aged 3-6 years by direct observation in preschool settings, following a two-phase adaptation study involving 67 preschool children aged 3-6 years in the first phase and 27 preschool children aged 3-6 years in the second phase (Sharma et al., 2011).

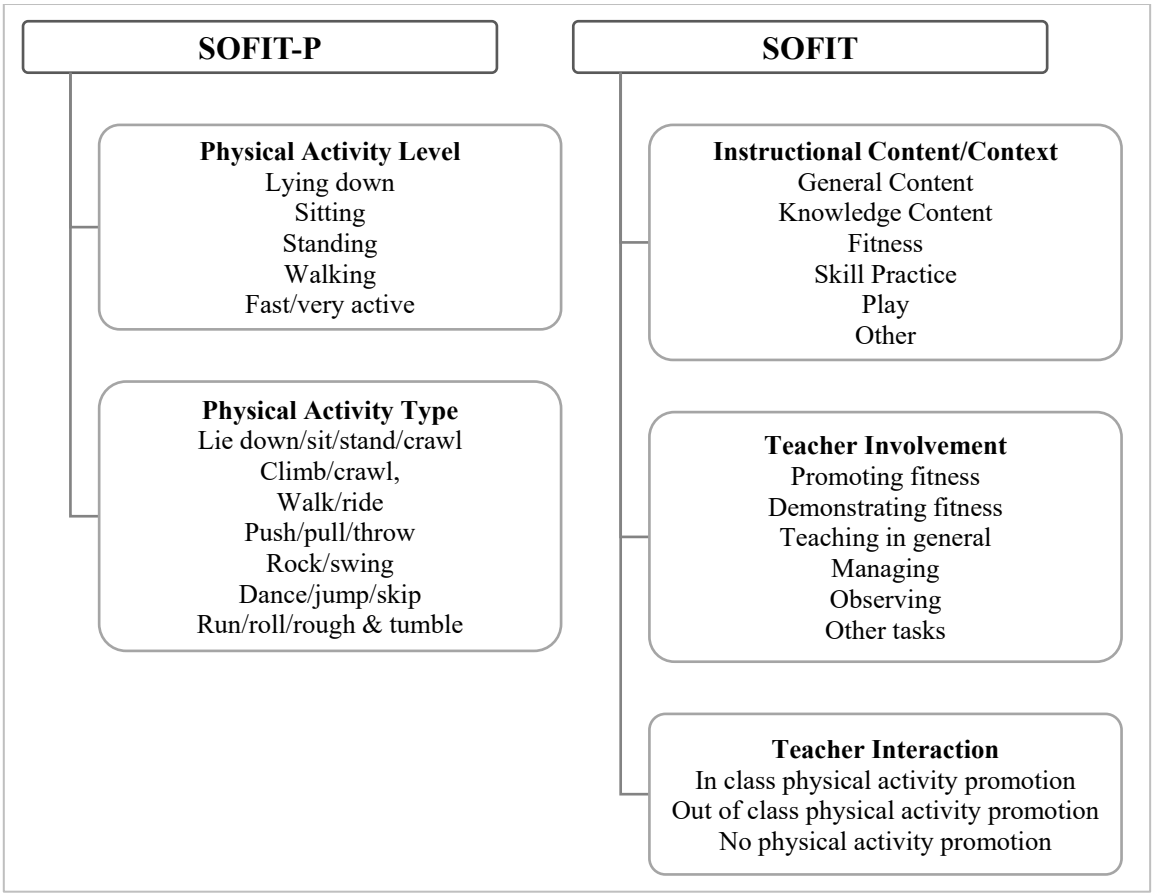

Figure 1. SOFIT-P and SOFIT categories used in the study

During the SOFIT-P administration, the observers randomly selected four children (two girls and two boys) from each classroom. In addition to these four students selected for observation, a backup student was also selected in case one of the selected students left the observation area (departure from the practice area, abandonment of the activity, injury, etc.) during the practices. These selected children were observed for 20 seconds each in five categories and 27 subcategories, and the observers recorded for 10 seconds in alternating blocks for a total of 4 minutes. In each practice, 4 selected students were observed for 4 minutes and 12 intervals, irrespective of the practice duration. It is important to note that the data reported are group rather than individual data, as these four children were representative of the physical activity of the whole classroom during Movement Activity practice time.

Data Collection Procedures

Ethical approval was obtained from the university's Social and Human Sciences Ethics Committee before the start of the study. After approval from the ethics committee, permission to collect data from public and private preschool institutions was obtained from the relevant unit of the provincial Department of National Education. Following this, permission was also sought from the principals of 72 schools (46 public and 36 private) to conduct the research in their schools. However, it was only possible to collect data from some of the schools contacted due to the reluctance of principals or teachers to be videotaped. In the end, 50 schools were identified, and principals agreed to conduct the research, and teachers volunteered to participate. Permission was obtained from the parents of all the children in each classroom. Teachers who participated in the research were given detailed information before the study began. There was no intervention in the content of the teachers' Movement Activity practices. Based on the average duration of a physical education lesson in other levels of education, it was determined that an average of 40 minutes of Movement Activity practices in the preschool curriculum would be observed, and this information was made available to teachers. Movement Activity practices in early childhood curricula are designed to ensure children participate in physical activity throughout

their lives by enhancing basic movement skills and contributing to their physical, motor, cognitive, language, social, and emotional development and self-care skills. These activities develop children's basic movement skills, body awareness, motor competence (strength, coordination, speed, agility), and physical competence (flexibility, strength, endurance) and include the development of children's physical and motor competence, perceptual motor development and movement skills, namely displacement, object control, and balance skills. Examples of movement activities include activities that develop body awareness (different parts of the body such as shoulders, waist, elbows, and wrists), spatial awareness (up, down, front, back, right, left), strength, speed, agility, flexibility, endurance, and coordination. In addition to the use of structured materials such as balls, ropes, chalk, hula hoops, and balance boards, teachers can also use materials and environments that nature offers to children, such as grounds with different structures, climbing opportunities, logs to use for balance, traditional/local children's games, outdoor street games. The recommended duration of physical activity that can take place in the classroom or outdoors is at least 30 minutes, with the first five minutes consisting of warm-up games, 20 minutes of reviewing previous practice and new basic movement skills, and the last five minutes of cooling down (MoNE, 2013).

To ensure data accuracy, the Movement Activity practices were videotaped using a camera placed in a location that provided a clear view of all students and teachers in the practice area. The Movement Activity practices were recorded using the SOFIT-P guidelines. The recording started when half of the class arrived and ended when the teacher gave the end-of-lesson command for the movement activity. When viewing the video recordings, four students (two girls and two boys) were randomly selected for observation using the SOFIT-P observation tool. One student was observed every 12 intervals, with each interval consisting of 20 s of observation and 10 s of recording. The subcategories observed were student physical activity level, physical activity type, curricular lesson context/content, teacher involvement, and teacher interaction. This process continued throughout the practice time of the Movement Activity. An external voice recorder was also used to record the teachers' voices. Each videotaped Movement Activity practice was analyzed based on the "observe/record" commands, prepared in the format of 20 s of observation and 10 s of recording, according to the SOFIT-P description and procedures manual.

By the SOFIT-P guidelines, 12% of the video recordings of Movement Activity practices were observed twice by the same observer to demonstrate the consistency of an observer's observations when observing the same video recordings at different times and the consistency of two different observers' observations of the same video recordings (McKenzie, 2005). The observer used the SOFIT-P observation tool to code the videos. The reliability coefficient between two observations by two observers (interobserver agreement) and between two observations by the same observer (intraobserver agreement) was calculated using the following Van der Mars formula (1989):

$$\frac{\text{Agreements}}{\text{Agreements} + \text{Disagreements}} \text{ X } 100$$

Agreement occurs when the two observers in one observation, or the same observer in two observations, agree on a particular aspect of the observation, and disagreement occurs when the two observers in one observation, or the same observer in two observations, disagree on a particular aspect of the observation. Using the formula, the intraobserver reliability coefficients were calculated as 95.4% for Physical Activity Level, 95% for Physical Activity Type, 91% for Lesson Content/Context, 90% for Teacher Participation, and 95% for Teacher Interaction. Similarly, interobserver reliability coefficients were calculated using the same formula, and the coefficients were found to be 93.5%, 93.1%, 92.4%, 90.9%, and 94.6%, respectively, after two different observers viewed 12% of the video recordings.

Public and Private Preschool Characteristics

Analysis of learning environments in observed Movement Activity practices showed that 19 practices in public schools took place in classrooms, 2 in halls, 1 in a playground, and 1 in a hallway, 9 practices in private schools took place in classrooms, 9 in playgrounds, 8 in gymnasiums and 1 in a mini artificial grass field. The materials used in public school practices were 14 Smart Boards, 14 sound systems, 4 hurdles, 1 chair, 4 training cones, 3 balls, 1 gym mat, 1 handkerchief, 6 hoops, 5 half cones, and 2 slalom poles, while private schools used 6 sound systems, 3 hurdles, 6 chairs, 8 training cones, 7 balls, 7 gym mats, 1 handkerchief, and 1 half cone. In public schools, educational games were used in 23 Movement Activity practices, and dance-based educational games in 4 practices. In private schools, educational games were used in 26 practices, children's Pilates in 1 practice, children's Zumba in 1 practice, and dance-based educational games in 4 practices. Of the public school Movement Activity practices, 4 included the parkour race, 8 included the dance race, 4 included educational game-based competitions, and 6 included dance activities, while of the private school practices, 20 included the parkour race, 7 included dance race, 2 included dance and 2 included parkour running. In public schools, music was used in 15 practices and not in 8, while in private schools, music was used in 15 practices and not in 12.

Data Analysis

Statistical comparisons of physical activity levels, types of student physical activity, curricular lesson context/content, teacher involvement, and teacher interactions between public and private preschools were made using the Mann-Whitney U test. The use of the Mann-Whitney U test was due to the small sample size of the study (Pallant, 2011). All analyses were performed using IBM SPSS software (version 23.0; SPSS for Windows, SPSS Inc., Chicago, IL, USA).

Results

The results of the Mann-Whitney U analysis, which was used to compare the level of physical activity of the students in the Movement Activity practices in the public and private preschool institutions, showed that there was no statistically significant difference between the two groups of institutions. The amount of Movement Activity practice time spent lying down (U= 305.00, p= .85), sitting (U= 299.50, p= .83), standing (U= 298.00, p= .80), walking (U= 235.00, p= .11) and fast/very active (U= 284.50, p= .57) was similar in public and private schools.

When the physical activity type is examined by school types, the findings showed that there was no statistically significant difference between the two school types in the amount of time spent lying down/sitting/standing/squatting (U= 241.00, p= .18), climbing/crawling (U= 299.00, p= .36), walking/riding (U= 229.50, p= .07), pushing/pulling/throwing (U= 305.00, p= .85), rocking/swinging (U= 310.50, p= 1.00), and running/rolling/rough & tumbling (U= 237.00, p= .13). However, there was a significant difference in the amount of practice time spent on dancing/jumping/skipping (U= 215.00, p= .04). According to these findings, the amount of class time spent on dancing/jumping/skipping was greater in public schools (Mdn= 6.67) than in private schools (Mdn= .00).

Examining the curricular lesson context/content based on school type showed that there was no statistically significant difference in the amount of time spent on the categories of general content (U= 298.50, p= .81), skill practice (U= 310.50, p= 1.00), gameplay (U= 279.50, p= .54), and other content (U= 283.00, p= .25). However, there was a difference in the amount of time spent on the knowledge (U= 151.50, p= .002) and the fitness content (U= 189.50, p= .01). The results showed that the time spent on knowledge content was higher in public schools (Mdn= 10.34) than in private schools (Mdn= 4.16). Similarly, the time spent on fitness was higher in private schools (Mdn= 11.11) than in public schools (Mdn= .00).

Results from the comparison of teacher involvement by school type showed that there was no statistically significant difference between the two groups in terms of time spent on promoting fitness (*U*= 251.00, *p*= .09), demonstrating fitness (*U*= 270.50, *p*= .42), and observing (*U*= 220.50, *p*= .08), but showed that there was a significant difference in the time spent on instructing generally (*U*= 105.00, *p*= .001), management (*U*= 170.50, *p*= .001), and other tasks (*U*= 206.50, *p*= .03). According to these results, public school teachers (*Mdn*= 13.04) spent more time on instructing generally than private school teachers (*Mdn*= 3.92), public school teachers (*Mdn*=1.66) spent more time on management activities than private school teachers (*Mdn*= 0.00), and public school teachers (*Mdn*= 4.25) spent more time on other tasks than private school teachers (*Mdn*= .00).

The results of the analysis comparing teacher interactions by school type showed that there was no difference between the two groups of teachers in terms of Movement Activity practice time spent on promoting physical activity, fitness, or motor skills in class (*U*= 244.50, *p*= .11), promoting physical activity, fitness or motor skills out of class (*U*= 310.50, *p*= 1.00) and not promoting physical activity, fitness or motor skills in class or out of class (*U*= 244.50, *p*= .11). Results comparing students' physical activity levels, type of physical activity, curricular lesson context/content, teacher involvement, and teacher interaction between public and private schools are presented in Table 1.

Table 1. Comparison of Physical Activity Level, Physical Activity Type, Lesson Context/Content, Teacher Involvement, and Teacher Interaction between Public and Private Preschool Institutions

		n	$\bar{x}$	SD	Mdn	U	p
Student Physical Activity Level							
Lying down	Public	23	1.55	5.81	.00	305.00	.85
	Private	27	1.33	4.65	.00		
Sitting	Public	23	49.22	32.19	48.27	299.50	.83
	Private	27	47.88	28.73	45.09		
Standing	Public	23	39.80	27.31	36.11	298.00	.80
	Private	27	42.54	30.24	39.58		
Walking	Public	23	7.05	10.74	1.81	235.00	.11
	Private	27	4.29	8.20	.00		
Fast/very active	Public	23	2.35	3.88	.00	284.50	.57
	Private	27	3.94	5.93	.00		
Student Physical Activity Type							
Lie down/sit/stand/squat	Public	23	81.80	13.32	85.11	241.00	.18
	Private	27	84.27	20.36	89.36		
Climb/crawl	Public	23	.00	.00	.00	299.00	.36
	Private	27	.17	.89	.00		
Walk/ride	Public	23	5.21	8.71	1.41	229.50	.07
	Private	27	2.88	7.44	.00		
Push/pull/throw	Public	23	1.03	3.28	.00	305.00	.85
	Private	27	1.11	4.34	.00		
Rock/swing	Public	23	.00	.00	.00	310.50	1.00
	Private	27	.00	.00	.00		
Dance/jump/skip	Public	23	9.45	9.93	6.67	215.00	.04
	Private	27	6.60	19.39	.00		
Run/roll/rough & tumble	Public	23	2.49	4.07	.00	237.00	.13
	Private	27	4.94	5.93	3.23		

Table 1. Continued

		n	$\bar{x}$	SD	Mdn	U	p
Lesson Context/Content							
General content	Public	23	9.04	9.61	7.14	298.50	.81
	Private	27	7.97	7.89	5.88		
Knowledge content	Public	23	11.46	7.79	10.34	151.50	.002
	Private	27	5.12	4.02	4.16		
Fitness	Public	23	3.30	5.89	.00	189.50	.01
	Private	27	21.24	28.37	11.11		
Skill practice	Public	23	.00	.00	.00	310.50	1.00
	Private	27	.00	.00	.00		
Gameplay	Public	23	73.68	15.51	77.77	279.50	.54
	Private	27	63.59	31.78	70.83		
Other	Public	23	2.49	9.83	.00	283.00	.25
	Private	27	2.05	10.69	.00		
Teacher Involvement							
Promotes fitness	Public	23	2.04	4.41	.00	251.00	.09
	Private	27	1.48	6.44	.00		
Demonstrates fitness	Public	23	8.83	8.87	7.04	270.50	.42
	Private	27	18.02	24.29	10.63		
Instructs generally	Public	23	14.58	9.48	13.04	105.00	.001
	Private	27	4.67	4.19	3.92		
Manages	Public	23	2.81	4.28	1.66	170.50	.001
	Private	27	.44	1.30	.00		
Observes	Public	23	63.58	19.03	61.03	220.50	.08
	Private	27	71.54	27.32	81.66		
Other-task	Public	23	8.13	10.72	4.25	206.50	.03
	Private	27	3.82	10.01	.00		
Teacher Interactions							
Promotes in-class physical activity/fitness/motor skills)	Public	23	3.30	5.26	.00	244.50	.11
	Private	27	.68	1.45	.00		
Promotes out-of-class physical activity/fitness/motor skills	Public	23	.00	.00	.00	310.50	1.00
	Private	27	.00	.00	.00		
No promotion	Public	23	96.69	5.26	100.00	244.50	.11
	Private	27	99.31	1.45	100.00		

Discussion

This study aimed to investigate whether students' physical activity levels, types of physical activity performed, curricular lesson context/content, teacher involvement, and teacher interaction during Movement Activity practices differed between public and private preschools.

The research found that there was no difference between the physical activity levels of children in public and private preschools. In both types of school, the expected level of physical activity for these children during Movement Activity practices was found to be relatively low (public 2.35%, private 3.94%), with children sitting for almost half of the Movement Activity practices (public 49.22%, private 47.88%) and standing for a significant proportion of the practice time (public 39.80%, private 42.54%). The national and international literature contains a very limited number of studies involving preschool children and investigating levels of physical activity in physical education lessons through classroom observation. In one of the studies found in this limited body of literature, an American study by Robinson et al. (2018) found that contrary to current research findings, preschool children engaged in walking activity for approximately 51% of class time. They also found that children were involved in

sitting activity in 12.32% of the class time and standing activity in 28.64% of the class time but that the amount of time spent in physical activity was lower than expected, at approximately 8% of the class time. In addition, a study of a sample of preschools in Hong Kong found that children spent 12.3% of physical education class time sitting, 37.6% standing, and 30% walking. In the same study, it was also reported that the students were active for 19.5% of the class time (Chow et al., 2015a). In the Belgian sample, it was found that children in preschool physical education spent 27.8% of class time sitting, 23.4% standing, and 27.7% walking, and that the time spent actively in class was 18.1% (Van Cauwenberghe et al., 2012). The results of the current study and the international literature show that the expected goals of keeping preschool children physically active are not being met. In other words, the WHO recommendation of at least 60 minutes of moderate-to-vigorous, primarily aerobic, physical activity per day for children appears to be far from being met in schools (WHO, 2020). Although there may be a variety of reasons why pupils in this study are not physically active in Movement Activity practices, similar results are observed in physical education classes that are taught by classroom teachers rather than by the specialist physical education teacher (teacher with a diploma in physical education). Supporting this, a study that used the same observation tool to determine the level of physical activity of fourth-grade primary school students in Türkiye found that students spent an average of 72% of class time standing (Yon & Saraç, 2022). Based on this, it can be interpreted that the lack of physical activity among the students means that the teachers are not adequately equipped to get students active, which may be due to the limited number of courses related to child physical activity in their teacher training (Council of Higher Education, 2018). Kippe and Lagestad (2018) highlighted that differences in the physical activity levels of preschoolers can be attributed to the professionals leading physical activity at school, namely teachers. The literature also highlights that preschool children's physical activity levels are linked to the physical environment (i.e., indoor space, outdoor playground), and schools need to encourage children to be physically active and implement programs to increase physical activity (Finn et al., 2002). The information obtained from the observation data on this topic showed that the majority of the practices in public schools (83%) were carried out in the classroom. On the other hand, it was observed that the areas where the practices were carried out in private schools were mostly classrooms (33%), school gardens (33%) and sports halls (30%). It was observed that public schools mostly use smart boards and sound systems depending on the classroom environment, whereas private schools do not use smart boards, but there are similarities in the use of materials such as hoops, hurdles, training cones, half cones, balls in practices, although there are differences in the number of materials. It was also observed that competitions involving parkour or dance movements and mostly accompanied by music were used in both types of schools during physical activity sessions. In light of this information, it is suggested that the fact that the activities selected for Movement Activity Practical include competitions and that, although different areas and different teaching materials and equipment are used during these competitions, the fact that only 1-2 pupils are active during the competitions is the main reason why pupils are very little active in the Movement Activity practices observed.

Furthermore, it has been highlighted that teachers' perceptions, beliefs, and behaviors toward physical activity also influence preschool children's physical activity levels through physical education (Tremblay et al., 2012). Studies have reported that children's levels of physical activity depend on whether the preschool teacher decides when children go outside, which depends on whether the teacher prefers different types of climate (hot or cold), the level of noise or congestion outside, the amount of preparation needed to go outside, the degree to which the teacher believes that it is the teachers' responsibility to meet children's physical activity needs, or whether the teacher feels that children are safer outside (Brown et al., 2009; Copeland et al., 2012; Tremblay et al., 2012). There are also studies in the literature that show that children in physical education classes with physically active teachers have higher levels of physical activity than children in classes with teachers who mostly sit, stand, or are inactive in class (Cheung, 2020). Based on the findings of these studies in the literature, it can be argued that the teachers in this study spent most of their practice time observing the students without

participating in any activity themselves or with their students and they were not physically active in the classroom and the students were mainly involved in lying/sitting/standing/squatting activities. Despite this inactivity on the part of the pupils, there was no encouragement on the part of the teachers for the pupils to be physically active. One of the main reasons for this inactivity could be the teachers' inappropriate choice of activities for the pupils, i.e., activities that do not keep them physically active during the whole class.

When the type of physical activity was examined in the study, it was found that more Movement Activity practice time was spent on dancing/jumping/skipping activities in public schools than in private schools. However, in both public schools (9.45%) and private schools (6.60%), this amount of time represents less than 10% of total practice time. In this study, it would be more accurate to focus on the insufficient practice time devoted to activities such as dancing, jumping, and skipping that promote children's physical activity rather than comparing how public and private school teachers use practice time for these activities in the Movement Activity. However, differences in school characteristics and facilities (e.g., play areas, and materials) could explain these differences (Broekhuizen et al., 2014; Kippe & Lagestad, 2018). The most striking finding in terms of the type of physical activity was that the majority of time spent in Movement Activity practices by students in both public schools (81.80%) and private schools (84.27%) consisted mainly of lying down/sitting/standing/squatting activities. Research investigating the types of physical activity of preschool children in observed physical education classes in Spain found that 17.82% of class time was spent walking, 14.20% sitting or squatting, 12.47% standing, and 10.52% jumping or skipping (Lahuerta-Contell et al., 2021). In a US study that supports our research, researchers found that 89% of preschool physical education class time was spent in sedentary activities such as sitting, squatting, lying down, and standing. Activities involving movement were much less common (Brown et al., 2009). Some studies show that the majority of class time in preschool physical education is spent on the types of activities that make children inactive, while others show that the majority of class time is spent on the types of physical activities that make children active. For example, in the Hong Kong sample, observations of 90 physical education lessons by 25 teachers in four schools showed that most class time in preschool physical education lessons was spent on jumping (39%), crawling (32%), throwing (29%), balance beam movement (22%), climbing (20%) and tricycle riding (18%), and less time on rhythmic activities (6%) and free play (2%) (Chow et al., 2015a). While the literature does not directly compare the physical activity status of students in public and private preschools, studies conducted in schools with different characteristics suggest that lack of space and facilities for physical activity are significant barriers to children's physical activity. In one such study, Chow et al. (2015a) conducted a study in four schools and all private preschool institutions in Hong Kong and reported that students' activity levels, curricular lesson context, and teacher behavior variables differed between schools. Research has shown that preschool physical education's physical learning environment, including physical education facilities, environment and capacity, sports equipment, and indoor and outdoor play areas, have a positive impact on children's physical activity levels (Bower et al., 2008; Coe, 2020). In this study, the higher proportion of competitive dance activities in public schools may be the main reason why the percentage of dance/jump/skip activities was lower in both public and private schools, but higher in public schools than in private schools. In private schools, most of the activities were carried out as parkour races. In addition, the fact that in public schools the exercises were mostly done in the classroom, whereas in private schools the exercises were done in the school garden, the classroom, and the sports hall, may have led to a higher jump/jump/skip rate in public schools than in private schools, as the dance/jump/skip activities were more suited to the classroom environment.

The results of the current study showed that in terms of lesson context/content, private schools (21.24%) spent more time on fitness activities than public schools (3.30%). It would be more appropriate to focus on the lack of time spent on fitness activities rather than on the difference in time spent on fitness activities by teachers in public and private preschools. An important point regarding findings related to fitness activities is that although 21.24% of the Movement Activity practice time in private schools is devoted to fitness, the level of physical activity of the pupils consists of sitting and standing for most of the practice time and the type of physical activity consists of lying, sitting, standing and squatting activities. This may be a clear indication that although private school teachers use fitness activities more than public school teachers, the fitness content chosen by private school teachers is far from the content that gets children physically active. One of the possible main reasons for these findings could be the fact that materials and facilities are more available in private schools than in public schools, as shown by national (Can & Kılıç, 2019; Yıldız, 2018) and international studies (Coelho & Tolocka, 2020). In support of this comment in the Ghanaian sample, preschool teachers stated that the lack of resources for course content that would enable students to be physically active was one of the barriers to preparing courses with content that encourages physical activity (Sofo & Asola, 2015). It is also noteworthy that in terms of curricular lesson context/content, a large proportion of practice time in both public (73.68%) and private (63.59%) schools is spent playing games, even though the level of physical activity is mostly sitting/standing and the type of physical activity is lying down/sitting/standing/squatting. However, children's physical activity levels are expected to increase during play due to the nature of the game (Brown et al., 2009). These findings can be interpreted as suggesting that the games used in Movement Activity practices are those that keep students inactive rather than those that get them physically active. In contrast to our findings, in Spain, it was reported that 65.60% of the time in pre-school PE was spent in free play and 28.50% in skill training. 40.20% of the time in PE, pupils were sedentary and 59.79% active. The same study also found that 17.82% of class time was spent walking, 14.20% sitting or squatting, 12.47% standing, and 10.52% jumping or skipping (Lahuerta-Contell et al., 2021). The findings of Lahuerta-Contell et al. (2021) are inconsistent with our research findings because, although much of the course content is gameplay, much of the physical activity of the students in our study was sitting and standing. Therefore, the characteristics of the type of physical activity chosen as part of the course content are an important factor in increasing or decreasing students' physical activity levels. Van Cauwenberghe et al. (2012) reported that in preschool physical education classes in Belgium, 41.7% of class time was spent on skill practice, 18.3% on knowledge content, 17.9% on general content, 10.4% on fitness activities, and 11.7% on gameplay. Indeed, the data on the characteristics of the environments where the physical activity practices take place could be the result of public schools performing the practices in the classroom environment, while private schools perform them in a variety of settings, e.g. in the class, in the garden, in the gym, and so on, and that the content of the practices in private schools includes fitness to a greater extent than in public schools. Besides this finding, it would be more appropriate to take into account the fact that the fitness content of the exercises does not contribute to children's increased physical activity when considering the overall interpretation of these findings.

One of the other striking findings from this research is that, although a significant proportion of Movement Activity practice time is spent on gameplay content, students were sitting (27.8%), standing (23.4%), and walking (27.7%) for a significant proportion of the practices, and were sedentary for 53.7% of the practice time. Interpreted from this perspective, the incompatibility between the curricular lesson context/content of Movement Activity practices and the level and type of physical activity of the students in Van Cauwenberghe et al.'s (2012) findings supports our research findings. Possible reasons for these research findings include inadequate school facilities, as well as teachers' negative attitudes towards physical activity or the value they place on it, and whether or not the teacher is competent to keep children physically active (Coleman & Dyment, 2013; Froehlich Chow & Humbert, 2011). There is research evidence to suggest that, particularly in the case of preschool children's outdoor

physical activity, teachers believe that children should be left to their own devices, should be carefully supervised without unnecessary intervention, and should only intervene in the case of inappropriate and dangerous behavior (Davies, 1997). These literature findings can also be interpreted as the teacher-directed practices of the students in this study restricting their physical activity, and indeed, the findings showed that the teacher-designed course content within the physical activity practices in the current study kept students inactive.

The results of the research on teacher involvement showed that teachers in public schools spend more time on instructing generally (14.58%), managing (2.81%), and other tasks (8.13%) than teachers in private schools (4.67%, 0.44% and 3.82% respectively). However, the most striking finding in this category is that teachers in both public (63.58%) and private (71.54%) schools spend a large proportion of their teaching time observing (monitoring entire class, group, or individual, see McKenzie, 2005). Similar to our research, preschool teachers in the Spanish sample were found to spend 46.80% of their physical education class time observing and 25.60% of their class time managing. Teachers in both countries spend a significant proportion of their teaching time observing. However, there is a difference in how this is reflected in pupils' physical activity levels. The preschool children in the Spanish sample are more active for a more significant proportion of the lesson than the children in the Turkish sample. The main reason for these contrasting findings may be, firstly, the longer time spent on skill practice in physical education classes in Spain and, secondly, the fact that children are allowed to move physically in a controlled way during free play (Lahuerta-Contell et al., 2021). In contrast to the current research findings, in the Belgian sample, Van Cauwenberghe et al. (2012) reported that preschool teachers generally provided instruction for about 50% of the time and managed to do so for 23.2% of the time in physical education classes. In the same study, observation time accounted for only 3.2% of class time. In this case, to increase pupils' levels of physical activity, teachers' actions that contribute to pupils' level of physical activity need to change from being observers, as in the results of this study, to instructors, as in the literature. In a study conducted by Chow et al. (2015a) in a preschool setting in Hong Kong, teachers demonstrated classroom management behaviors for almost half of the physical education class time (46.5%), observed for 25.4%, and promoted fitness behaviors for 21.2%. Teachers' time spent on general instruction was relativelty low (6.7%) in the same study. Contrary to our research findings that teachers were mainly involved in student observation, it wouldn't be wrong to say that spending more time on administrative activities has a positive effect, mainly if the course content includes skill practice and administrative activities within the course that help get children moving and increase children's physical activity (Chow et al., 2015a). The main reason for the fact that teachers in both public and private schools observe their pupils for most of the practices could be that the pupils are mostly playing competitive games within the framework of Movement Activity practices. The behaviour of stopping and intervening during this competition is not shown because it is contrary to the nature of competition.

Another remarkable finding concerning teacher interaction is that physical activity, fitness, and motor skills were not promoted by teachers in class or out of class for the majority of the Movement Activity practice time in both public schools (96.69%) and private schools (99.31%). Similar to the findings of the current study, a study of preschool children in Hong Kong by Chow et al. (2015b) found that physical activity was not encouraged both in and out of class for 98.8% of the time in physical education classes. Brown et al. (2009), when observing physical activity levels in preschool physical education classrooms in the United States, reported that children were sedentary for 89% of class time and that teachers rarely encouraged children to increase or decrease their physical activity during their observations. In preschool settings, the beliefs, attitudes, and creativity of teachers about physical activity determine whether or not children are physically active, as teachers determine what activities students participate in (Copeland et al., 2012). Evidence from national and international studies suggests that regular physical activity, established as a lifelong practice from an early age, should not only be

encouraged but remain a focus of ongoing research in this field. Given that the curricular lesson context/content in the current study is primarily designed as a game that keeps students inactive, that students' physical activity levels are low, and that the types of physical activity are mostly lying down, sitting, standing, or squatting, and that the teacher observes most of the class time without interfering with students, it is not surprising that physical activity is not promoted inside or outside of school in public and private schools. Creating an environment that encourages active involvement involves designing a learning environment where children engage in physical activity as a part of the classroom experience, and where teachers take an active role in supporting pupils' progress in achieving set educational objectives within this dynamic learning environment.

Several limitations to this study should be acknowledged, and that may guide further research. A significant limitation is that only female teachers were included in this study and that a convenience sampling method was used to determine which female teachers were included rather than a random sampling method. For the Movement Activity practices that were observed as part of the research, both permission and an appointment were arranged before the observation. As the teachers were informed in advance, they may not have reflected natural teaching behaviors in the videotaped Movement Activity practices. A further limitation of the study is the fact that only a single observation was carried out for each teacher. Although the schools included in the study were categorized into public schools and private schools, the relationship between school characteristics and SOFIT-P and SOFIT categories could not be examined because the facilities of the schools were not considered as study variables. Despite its limitations, the present study also has some strengths. Firstly, the study contributed to the limited international and especially national literature in terms of identifying children's levels of physical activity, the types of physical activities that children engaged in, the curricular lesson context/content of teaching, teacher involvement, and teacher interactions in the preschool Movement Activity practices. Unlike most data collection methods used to assess physical activity in the preschool, which typically rely on information provided by teachers or parents, this study utilized direct observation as a means of data collection. Direct observation is a crucial technique as it uncovers real-time insights into the dynamics of the classroom environment and physical activities taking place within it.

Conclusion

In conclusion, according to the current study comparing public and private preschools regarding students' physical activity levels, the findings showed that preschoolers in both public and private preschools engage in minimal physical activity and spend most of their Movement Activity practice time sitting or standing. Similar results were obtained when analyzing the type of physical activity the students engaged in within the research framework. It was observed that the type of physical activity of the students in the Movement Activity practices in both public and private schools consisted of lying/sitting/standing/squatting at a high rate, except for dance/jump/skip activities (which were used more in the public schools than in the private schools, but were used in 10% of the lessons in both schools). When comparing the practices of public and private schools in terms of the context/content of Movement Activity practices, it was found that both public and private schools included a large percentage of gameplay content in the practice time, in addition to the findings that public schools spent more time on knowledge content and private schools spent more time on fitness content. In terms of teacher involvement, although the observed lessons show that public school teachers spend more time on instructing in general, managing, and other tasks than private school teachers, the time spent on these activities is short, but the most salient and critical finding for both types of schools is that teachers observe students during most of the Movement Activity practices. Finally, teachers in both public and private schools were found not to promote physical activity in and out of the classroom during nearly all of their Movement Activity practice time. These results showed that the inclusion of games by preschool teachers in physical activity practices and the observational

behavior of teachers did not increase children's physical activity. Based on these results, it appears that the level of physical activity in preschool Movement Activities is not in line with the objectives of the MoNE preschool program or the WHO guidelines and recommendations for physical activity in children.

Suggestions

It is expected that the results of this research will have important implications for educational policymakers, in-service preschool teachers, and teacher candidates about preschool education. In-service preschool teachers can be offered professional development seminars to increase preschoolers' physical activity levels, primarily through Movement Activities and other practices. Based on the findings of this research, movement-related courses such as physical education and physical activity in preschool teacher education programs can be reviewed and expanded to enhance the skills of teacher candidates who are future teachers in promoting physical activity levels of preschool students. As only female teachers were included in this study, it is possible to make comparisons of similar variables by observing both female and male teachers in similar studies. The present study added very significant findings to the literature by identifying physical activity, curricular lesson context/content, and teacher behaviors through observations in the preschool Movement Activity practices. However, it did not explore the possible reasons for the findings. Therefore, future studies can consider variables such as teacher characteristics, school characteristics, and student characteristics to explain these issues and conduct mixed-design research that combines quantitative and qualitative research. The findings on physical activity, curricular lesson context/content, and teacher behaviors in early childhood Movement Activity practices can be compared with the course content taken by undergraduate students in early childhood teacher education programs to become proficient in physical activity.

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