A MIXED METHODS APPROACH TO INVESTIGATING THE CHANGES OF PHYSICAL ACTIVITY BEHAVIORS OF CHILDREN DURING THE COVID-19 PANDEMIC: PARENT REPORT

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ABSTRACT

A MIXED METHODS APPROACH TO INVESTIGATING THE CHANGES OF PHYSICAL ACTIVITY BEHAVIORS OF CHILDREN DURING THE COVID-19 PANDEMIC: PARENT REPORT

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After the COVID-19 pandemic was announced, a series of measures were taken by governments, including home confinement and social distancing due to prevent the rapid spread of the coronavirus. Though the importance of physical activity in childhood is well known, pandemic-related restrictions affected opportunities to reach healthy movement behaviors. The present study aimed to reveal the evidence of the impact of the COVID-19 pandemic on physical activity behaviors of children aged between 5-12 years. The study implemented a mixed methods approach integrating survey methodology with interviewing techniques. A random sample of Turkish parents (n=205) including 165 mothers and 40 fathers completed an online questionnaire open for a whole year. After collecting the quantitative data, semi-structured interviews were conducted with eight parents to profoundly investigate the parents' understandings of their children's physical activity behaviors during the COVID-19 pandemic. The results showed a decrease in physical activity behaviours of children and the frequency of physical activity participation during the COVID-19 pandemic. Findings clarified how much parents cared about children's sleep patterns and ensured that sleep duration was enough for children's age. Moreover, this study revealed a decrease

in time spent outdoor while increase in time spent indoor. Parents claimed they mostly lost control of screen time, resulting in increased in screen viewing. Findings clarified the negative impact of the COVID-19 pandemic on children's physical activity behaviors. This study describes the need for public health strategies to improve health policies for children to offer indoor and outdoor physical activity opportunities.

Keywords: sedentary behavior, pandemic, activity time, outdoor, indoor

ÖZ

COVID-19 PANDEMİSİ SIRASINDA ÇOCUKLARIN FİZİKSEL AKTİVİTE DAVRANIŞLARINDAKİ DEĞİŞİKLİKLERİ ARAŞTIRMAK İÇİN KARMA BİR YÖNTEM YAKLAŞIMI: EBEVEYN RAPORU

ALKAN, Leyla
Yüksek Lisans, Beden Eğitimi ve Spor Bölümü
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COVID-19 pandemisi ilan edildikten sonra, koronavirüsün hızla yayılmasını önlemek için hükümetler tarafından karantina ve sosyal mesafe kuralı da dahil olmak üzere ciddi önlemler alındı. Çocukluk çağında fiziksel aktivitenin önemi iyi bilinmesine rağmen, pandemi kısıtlamaları çocukların sağlıklı hareket davranışları için ulaşabileceği imkanları etkiledi. Bu çalışmanın amacı, COVID-19 pandemisinin okul çağındaki çocukların fiziksel aktivite davranışları üzerindeki etkisinin kanıtlarını ortaya çıkarmaktır. Çalışma, anket metodolojisini görüşme tekniği ile entegre eden bir karma yöntem yaklaşımı uygulamıştır. Rastgele bir Türk ebeveyn örneği (n=205), bir yıl süren çevrimiçi bir anket doldurdu. Niceliksel tanımlayıcı istatistikleri topladıktan sonra, ebeveynlerin COVID-19 salgını sırasında çocuklarının fiziksel aktivite davranışlarına yönelik anlayışlarını derinlemesine araştırmak için sekiz ebeveyn ile yarı yapılandırılmış görüşmeler yapıldı. Sonuçlar, COVID-19 pandemisi sırasında çocukların fiziksel ak-

tivite davranışlarında ve fiziksel aktivite katılım sıklığının azaldığını gösterdi. Bulgular, ebeveynlerin çocukların uyku düzenine ne kadar önem verdiğini ortaya çıkardı ve uyku süresinin çocukların yaşına göre yeterli olmasını sağladı. Ayrıca, bu çalışma, dışarıda geçirilen zamanın azaldığını, içeride geçirilen zamanın arttığını ortaya koydu. Ebeveynler, çoğunlukla ekran başındaki kontrolü kaybettiklerini ve bunun sonucunda ekran görüntülemenin arttığını ifade ettiler. Çalışma ayrıca yapılandırılmış açık hava oyun tesislerinin kaybının fiziksel aktivitede azalmaya neden olduğunu vurguladı. Akran ilişkisi eksikliği birçok ebeveyn tarafından çocukların önemli bir sorunu olarak dile getirilmiştir. Bulgular, COVID-19 pandemisinin çocukların fiziksel aktivite davranışları üzerindeki negatif etkisini ortaya koymuş ve çoğunlukla sosyal ağlarını etkilemiştir. Bu çalışma, çocuklara hem içeride hem de dışarıda fiziksel aktivite fırsatları sunmak ve sağlık politikalarını iyileştirmek için halk sağlığı stratejilerine duyulan ihtiyacı netleştiren kanıtlar sunmaktadır.

Anahtar Kelimeler: sedanter davranış, pandemi, aktivite zamanı, açık hava, kapalı alan

I dedicate this thesis to our dear son, Bilgehan ALKAN, who gives meaning to our life.

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ALKAN, our lives gained meaning with you, and every step I will take from now on will be to improve your life and that of all other children.

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PA Physical Activity

PE Physical Education

ST Screen Time

WHO World Health Organization

CHAPTER 1

INTRODUCTION

In specific periods of history, disease outbreaks happened that affected the whole population of the World. The Spanish Flu, Hong Kong Flu, SARS, H7N9, Ebola, and Zika (Qiu et al., 2017) are examples of pandemics that negatively impacted the health, economy, society, and security of national and global communities. Dictionary of Epidemiology did the internationally accepted and widespread definition of a pandemic: "an epidemic occurring worldwide, or over an extensive area, crossing international boundaries and usually affecting many people" (John, 2001, p.131). According to that description, it is clear that pandemics extend over large geographical areas and adversely affect nations in terms of health conditions. The current pandemic that the World must fight against is the COVID-19 pandemic. This infection was first detected in December 2019 in Wuhan, China's Hubei province. This virus spread out from China to all over the World, and after a short time of when first seen, the World Health Organization (WHO) announced the pandemic on March 11, 2020 (WHO, 2020). Globally, on August 11, 2022, 585,086,861 confirmed cases of COVID-19, including 2,615,018 deaths, were reported to WHO (2022). When these numerals are examined, it is stated that the virus seriously affected humanity in vast proportions of the World. The reason why it spread quickly is the mode of transmission. The respiratory tract is the easiest way of the mode of transmission. When people with COVID-19 breathe, sneeze, sing or even talk, they produce respiratory droplets (CDC, 2020), and if a person exposes to those droplets, the infection might most likely occur.

People who are not infected could protect themselves from COVID-19 by taking basic but essential measures. CDC listed the precautions (2020), which mainly focused on three basic precautions; mask, distance, and hygiene. Firstly, wearing a

mask is an efficient way to be preserved from infection, and people should change this mask at least by the hour. Secondly, keeping a physical distance of at least one meter from people could protect them from getting sick. The last precaution on the list is following as many hygiene rules as possible. These rules include washing hands for at least 20 seconds with soap and water, using a hand sanitizer that contains at least 60% alcohol, and avoiding touching their eyes, noses, or mouths with unwashed hands.

The COVID-19 outbreak led to significant changes in different areas of life, including the education system, work, and daily life habits (Williamson et al., 2020; Kim et al., 2021). Schools changed their educational system from face-to-face to online due to the COVID-19 pandemic. The companies, the avail-able ones, switched their mode of operation from office-based working to teleworking. Although these precautions had essential benefits during the pandemic because they restricted physical interaction and prevented people from getting infected, they could cause significant health problems. Because of lockdown, people stayed at home for weeks, which could negatively affect their mental and physical health.

A group of researchers (Wu et al., 2021) in China made a meta-analysis study to figure out mental health issues during the COVID-19 pandemic. They revealed that the pandemic increased mental health problems globally, specifically for healthcare workers, noninfectious chronic disease patients, COVID-19 patients, and quarantined persons. The pandemic negatively impacted children as well as adults. Children were intensively exposed to pandemic, virus, and disease terms. In addition, their freedom of movement was limited, and they even could not meet with their friends to socialize. A significant study mentioned the possible adverse outcomes on children's mental health during the COVID-19 pandemic (Javed et al., 2020). Regarding the results of this study, children could have to deal with psychological difficulties such as depression, anxiety, or sadness due to social isolation. In such cases, children might tend to behave more aggressively. Therefore, the study suggested that parents might have to struggle with excessive crying of their kids, changes in eating habits, irregular sleeping patterns, etc.

A critical study examined and compared the communication ways between parents and their children before and during the pandemic (Döğer & Kılınç, 2021). They

revealed a significant difference in the sub-dimensions of speech, listening, and message in parent-child communication before and during the pandemic. All these studies proved that the COVID-19 pandemic is a period that restricts people's both social and private life. Due to the restrictions, people could face unexpected results and don't know how to handle these outcomes.

To mitigate these adverse outcomes of the pandemic, Okuyan and Karasu (2021) listed general precautions that adults or children could take. According to the list, people should try to meet basic needs online as much as possible. It should be ab-stained from touching the most used surfaces by others, such as lift buttons or door handles. People should regulate eating habits by considering an adequate and balanced diet as much as possible. Besides, there should be proper and adequate sleeping hours for physical and mental health during the pandemic. In addition to these practical suggestions to reduce the effects of the pandemic, physical activity (PA) is also another powerful way to stay healthy during the COVID-19 pandemic.

The World Health Organization (2020) recommends several physical activity guidelines for different age groups. Based on the guideline, infants under one year of age should be physically active several times daily. For those not yet mobile, this includes at least 30 minutes in a prone position (tummy time), as floor-based play, spread throughout the day while awake. The guideline states that children under five should spend at least 180 minutes daily in various physical activity settings. The age group between 5 and 17 should do moderate to vigorous physical activity at least 60 minutes a day and three days a week. These activities should be for strengthening muscles and bones. Adults over 18 years old should do at least 150 minutes of physical activity throughout the week at a moderate intensity level or 75 minutes of the vigorous-intensity level of physical activity. These activities should include major muscle groups to develop and maintain musculoskeletal health. According to the guideline, older adults could have difficulties with mobility; therefore, they could do physical activity three or more days a week to enhance balance and prevent falling.

1.1.Background

Governments have been taking strict precautions to prevent COVID-19 from spreading. One of the significant steps was lockdown to keep people from getting together. This precaution resulted in staying at home for long days. The epidemic process led to understanding the importance of physical activity once more. Although there have been making compact definitions of physical activity, it was basically defined as "bodily movement produced by the contraction of skeletal muscle that increases energy expenditure above the basal level" (Caspersen et al., 1985, p.126).

Pate (1993) categorized physical activity as low, moderate, and vigorous levels according to intensity. Low-intensity activities include daily movements that keep the heart rate steady and require the least energy compared to moderate and vigorous exercises, including casual walking, household chores, stretching, sitting, and lightweight training. Moderate-level intensity activities require more breathing and heartbeat than low-intensity activities, brisk walking, dancing, skipping rope, and low-impact aerobics (Pate, 1993). Vigorous-intensity activities need the most energy and oxygen to complete the exercises: shoveling, carrying heavy loads, basketball games, soccer games, and tennis singles (Pate, 1993).

Many essential studies clearly stated the relationship between an active lifestyle and well-being (Goldfield et al., 2007; Nopembri et al., 2016; Norris et al., 1992). The US Surgeon General's report (1996) on physical activity and health suggests that people of all ages, both male and female, can benefit from regular exercise. That report states that exercise reduces premature mortality from strokes, coronary artery disease, hypertension, and diabetes mellitus, as well as some forms of cancer. Additionally, the report stated that regular physical activity contributes to bone, muscle, and joint health. Therefore, participation in physical activity and exercise can maintain quality of life, health, and physical function and reduce falls among older people. (Gillespie et al., 2012).

Hsia et al. (2005) studied the health outcome of physical activity. They searched for the association between diabetes and physical activity. They found a strong relationship between walking as exercise and diabetes risk explaining that the women in higher physical activity categories were less likely to develop diabetes than women in

the lowest physical activity category. Braith et al. (1994) reported a significant decrease in systolic and diastolic blood pressure after six months in the exercise group compared with the control group. The other systematic study by Hagberg et al. (1989) included older hypertensive subjects (mean age 64 years) and followed up for nine months. The researchers reported a significant reduction in systolic blood pressure in the low-intensity group compared with the control group.

According to the studies have down on physical activity benefits, the results indicated that there are countless benefits of physical activity on health in older people by reducing the risk of cardiovascular heart diseases, diabetes, falls, obesity, etc. (Braith et al., 1994; Hagberg et al., 1989; Hsia et al., 2005).

An active lifestyle during childhood benefits children's physical and cognitive health. Physical activity reduces the risk of chronic diseases such as obesity, type 2 diabetes, and coronary heart disease. Even moderate-intensity exercise of a non-structured physical activity has a crucial impact on preventing chronic diseases and promoting healthier life (Sothern et al., 1999). More recently, the study done by Chaddock et al. (2011) revealed that physical activity was stonily associated with enhanced cognitive function using neuropsychological and psychometric tests.

Harrison and Narayan (2003) studied the impact of physical activity during childhood on children's academic achievement. They figured out the relationship between sports/extracurricular activities and academic success. This study included nearly 50.000 ninth-graders surveyed their sports participation level, extracurricular activities, and other attitudes at school. According to the study results, students who participated in any sports activity or extracurricular activities raised their grades, showed more participation in in-class activities, and had more chances to do their homework than those who did not participate in any sports activity.

Additionally, the study done by Lamb and Gulliford (2011) proved the positive contribution of exercise to the school connectedness of children who has a low score of school connectedness. Children were assigned to two groups in this study: control and experimental groups. While the experimental group took a daily 10-minute exercise session for six weeks, the control group maintained the daily routines. After six weeks period, scores of pretests and posttests were compared. Results showed that a regular exercise schedule could decrease the social problems among school students.

Moreover, children in the exercise program showed fewer conduct problems, peer problems, or hyperactivity.

A one-year longitudinal study conducted by Findlay and Coplan (2008) revealed the impact of organized sports participation on shy children. Based on this purpose, the participants received a one-year sports program, and their self-assessment scores of shyness and aggressive tendencies were measured. According to the study results, there was a positive association between sports participants and the psychosocial status of children and their wellness. Moreover, in this study, the children who attended sports organizations indicated higher self-esteem and gained more incredible social skills than those who did not.

All these studies (Sothern et al., 1999; Harrison & Narayan, 2003; Findlay & Coplan, 2008; Chaddock et al., 2011; Lamb & Gulliford, 2011;) proved the positive effects of sports on children's physical, cognitive, and social health. However, in the last two years, stress factors in people's lives because of the pandemic have also negatively affected children's general health. Stressors such as fear of infection, boredom and frustration, lack of social closeness with classmates, and family concerns about financial issues could have brought on more severe problems and persistent effects on children.

Children's physical activity behaviors may be adversely affected in extreme conditions such as war, natural disasters, and pandemics. As a result of these conditions, which lead to physical inactivity, children's physical activity levels may decrease. The first nationwide study in Germany aimed to investigate the impact of the COVID-19 pandemic on health-related quality of life and mental health of children in Germany from the perspective of children themselves (Ravens-Sieberer et al., 2021). When comparing the self-assessment reports of children, the current results of this study indicated that during the pandemic, the prevalence of observable mental health problems increased from 9.9% to 17.8%. Based on children's self-reported data, children experienced more anxiety during the COVID-19 pandemic than before. That study also highlighted another point that children suffered from the extra burden on themselves because of the negative outcomes of the pandemic. Moreover, in this study, children reported that homeschooling and online education are more complex than formal education.

Pombo et al. (2021) conducted a study to investigate the influence of the COVID-19 pandemic on the motor competence of school-aged children in Portugal. A total of 114 children were screened in terms of motor competencies before and after the COVID-19 lockdown. Based on the study results, the motor competence level of children, regardless of sex, decreased after the lockdown compared to before the lockdown. This study's results confirmed that children's motor competence was negatively influenced by imposed movement restrictions after the COVID-19 pandemic.

A longitudinal study from Australia (Sciberras et al., 2022) aimed to examine the impact of the COVID-19 pandemic among children with attention-deficit/hyperactivity disorder (ADHD). Parents of 213 children completed an online survey that assessed their physical health, mental health, and media use before and during the pandemic. According to the parents' reports, children with ADH were negatively influenced by the COVID-19 pandemic regarding physical health and physical activity.

Another study from Australia was conducted to examine the children's physical activity levels (Reece et al., 2021). The researchers developed a method including moderate-intensity physical activities and supplying by sports providers for more than eight weeks. In addition to physical activity, variables such as screen-based behaviors, including screen time (ST), internet use, and time spent on social media, were also examined through an online survey filled out by parents. According to the research results, most parents reported that their children's physical activity level decreased during the COVID-19 pandemic, with the decrease most apparent amongst adolescents aged 12 years or over. Another study finding was that only 15% of children reached the recommended level of physical activity. The COVID-19 pandemic also affected the physical activity settings, and most children (82%) spent more time at home during the pandemic period. The study results also highlighted that children's screen time increased during the COVID-19 pandemic.

Perez et al. (2021) aimed to explore how parents experienced the pandemic-related restrictions and how they impacted their children's movement behaviors. The semi-structured interviews were conducted with parents of children between the ages of 5 and 11. The interviews were designed to understand how children's daily movement behaviors and outdoor play were affected during the early stages of the COVID-19

pandemic. That qualitative study results proved that with the pandemic-related restrictions, parents tried to adapt to the new lifestyle and fight against the challenges they met during the COVID-19 pandemic. Overall, parents reported the loss of structured activities such as sports, organized destinations for physical activity, limited access to outdoor facilities, and increased sedentary behavior of children.

With the COVID-19 pandemic, daily habits have substantially changed. Because of lockdown, daily activities are limited, and people tend to use more mobile devices and spend more time on screen. The study conducted in Germany with participants aged between 4 and 17 (Schmidt et al., 2020) aimed to examine the differences in children's screen time before and during the pandemic. This study revealed that sports activity declined, whereas recreational screen time increased among children during the lockdown.

A literature review was conducted by Rossi et al. (2021). This scoping review aimed to present evidence on the impact of COVID-19 restrictions on children's physical activity behaviors before and during the COVID-19 pandemic. The researchers searched for the relevant studies and summarized a totally 99 studies as all met the inclusion criteria of being empirical and peer-reviewed studies. This scoping review made important inferences as listed below:

- The studies presented evidence of the decreased physical activity level of children and adolescents during the COVID-19 pandemic.
- The number of organized and structured sports activities decreased during the COVID-19 pandemic.
- The increase in physical activity levels changed according to national restrictions. This increase was primarily seen in outdoor play and unstructured activities.
- Socioeconomic status was a determinant of children's physical activity level. Generally, children from high socioeconomic status had greater opportunities to engage in different physical activity facilities than those from low socioeconomic status.

- The parental education differed depending on the context. While the physical activity level of children from well-educated families was high in European studies, higher parental, especially maternal education, was a negative determinant of the children's physical activity level.

To sum up, when the literature on physical activity during the COVID-19 pandemic was examined, there could be reached different studies with different results either increase or decrease in the physical activity level of children. The number of studies on children's physical activity behaviors and determinants during the COVID-19 pandemic has been substantially increased to describe the physical activity changes of children deeply.

1.2.Purpose of the Study

The main purpose of the study was to examine the impact of the COVID-19 pandemic on the physical activity behaviors of children aged between 5-12 based on parents' reports. Daily habits including sleep patterns and screen-based behaviors, indoor and outdoor physical activity opportunities of children were also examined.

1.3.Research Questions

Four research questions were identified for the purpose of this study. The followings were the research questions of this study:

1. How does the COVID-19 pandemic change the physical activity behaviors of children?
2. Does the COVID-19 pandemic change children's daily habits, including sleep patterns, active playtime, and screen-based behaviors?
3. How does the COVID-19 pandemic change children' use of outdoor/ environmental physical activity opportunities in the neighborhood?
4. How does the COVID-19 pandemic change children's use of indoor physical activity opportunities?

1.4.Significance of the Study

During pandemic periods, these conditions may adversely affect children's physical activity behaviors. As a result of pandemic periods, physical inactivity occurs, which can lead to long-term vital health problems. This study aimed to obtain information about the physical activity behaviors of children during the pandemic, examine their access to physical activity opportunities, and identify the difficulties they met during the COVID-19 pandemic. Because the COVID-19 pandemic is still affecting the whole world, there is a need for all age groups, especially children, to set organized programs to stay active even during the pandemic-related closures.

In the light of the study findings, the physical activity behaviors of children during the COVID-19 pandemic were examined. This study offered a holistic perspective for parents, educators, and policymakers. To protect the children from the harmful effects of the pandemic, the families could be guided by this study to reach practical and available suggestions. The study's results also clearly highlighted the importance of an outdoor environment where children can freely move. From this perspective, many professions could be benefited from this study to create outdoor spaces regardless of age, gender, or socioeconomic background. The role of school appears as an essential determinant for the physical activity level of children. Especially physical education (PE) and sports teachers or sports coaches have a great responsibility to ensure the children reach the recommended physical activity level even through online education. Policymakers could pursue policies based on children's high mental or physical profit. Instead of long-term closures, policymakers could search for alternatives that serve the well-being of children.

While the number of studies related to the pandemic is increasing worldwide, few studies conducted mixed methods with this age group in Turkey. From this point of view, this study is essential as it sets an example for future studies. This study will contribute to the existing literature as it analyzes the situation of families in detail and provides a broad perspective on children's physical activity behaviors. Except for pandemics, some extreme weather conditions or natural events, such as storms or hurricanes, could force us to stay at home for a long time. This study intends to guide in taking proper precautions and prepare for potential future restrictions.

1.5.Definition of Terms

- Physical activity: “All movement, including during leisure time, for transport to get to and from places, or as part of a person's work. Both moderate- and vigorous-intensity physical activity improve health” (WHO, 2020).
- Physical inactivity: “An insufficient physical activity level to meet present physical activity recommendations” (WHO, 2020).
- Exercise: “A type of physical activity consisting of planned, structured, and repetitive bodily movement done to improve or maintain one or more components of physical fitness” (Thompson, 2010, p.2).
- Physical fitness: “A set of attributes or characteristics that people have or achieve that relates to the ability to perform physical activity” (Thompson, 2010, p.2).
- Sedentary behavior: (from the Latin word sedere, “to sit”) “A distinct class of activities that require low levels of energy expenditure in the range of 1.0–1.5 METs (multiples of the basal metabolic rate) and involve sitting during commuting, in the workplace and the domestic environment, and during leisure” (Thorp et al., 2011, p.207).
- Physical Education: “A class or series of classes included in K–12 school curricula specifically designed to guide students toward becoming physically educated” (Johnson & Turner, 2016, p.8).
- A pandemic: “An epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people” (Last, 2001, p.131).
- COVID-19: “An infectious disease caused by the SARS-CoV-2 virus” (World Health Organization, 2022).
- Health: “A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (World Health Organization, 2022, para.1).
- Outdoor physical activity: It might be defined as leisure time activities that can create an interaction between the participant and the nature to meet the physical and mental needs of the participant.

- Indoor physical activity: It might be defined as any kind of movement/activities done in closed areas, which provide satisfaction, entertainment and socialization to stay healthy, dynamic and fit.

CHAPTER 2

LITERATURE REVIEW

This study aimed to examine the impact of the COVID-19 pandemic on physical activity behaviors of children aged between 5-12 years old. This chapter provides a theoretical background of physical activity literature. Physical activity definitions, PA guidelines explained in comparison charts, the importance of PA for children, environmental and home opportunities for PA participation of children, and PA changes in children during the COVID-19 pandemic are subtitles of this chapter explained one by one.

2.1.Definition of Physical Activity

There has been enormous interest in assessing and promoting physical activity among children last years due to the increase in the number of studies about the importance and benefits of PA on children's health and development. To understand the significance of PA, first, it should be examined the meaning of it. Caspersen et al. (1985) made the original and most accepted definition of PA as “any bodily movement produced by skeletal muscles that result in energy expenditure” (p.126). This broad term focuses on more 'energy expenditure' and skeletal muscles' frames. The amount of energy required to accomplish an activity can be measured in kilojoules (kJ) or kilocalories (kcal). This definition has been widely used and accepted by the research community.

There are minor variations in this definition. In 2018, the World Health Organization's (WHO) Global Strategy on Physical Activity applied a slight change to Caspersen's definition. Instead of activity resulting in energy expenditure, the WHO referred to bodily movement that "requires energy expenditure" (2018, p. 14). The US Surgeon General's report (U. S. Department of Health Human Services, 1996) defined physical

activity as "bodily movement produced by the contraction of skeletal muscle that increases energy expenditure above the basal level." In the US National Institutes of Health (NIH) Consensus Statement inserted slight additions to the original definition: "bodily movement produced by skeletal muscles that requires energy expenditure' and produces health benefits." (1995, p.3).

When a term is defined and borders determined, it would be more accurate to consider it within its social conditions. The definition of PA is perceived and interpreted differently by people differing in gender, class, and sociocultural factors. Tudor-Locke et al. (2003) conducted a comprehensive study in South Caroline to explore the definitions, meanings, and interpretations of PA among participants who were selected from African-American and American-Indian women (40+). The study used different data collection methods to gather information, including semi-structured interviews and focus groups. This interpretative approach supposes that human beings have conscious feelings. Because they are reflective individuals, they pretend to represent what is happening to them and how they interact with others. The women identify PA as "Ranged from structured exercise to improve oneself to daily work and home life demands." This study proves the idea that a definition could not be independent of its social context.

Another study was done by Mier et al. (2007), extended previous research and carried it one step further. The researchers claimed that Mexican Americans are at high health risks because of physical inactivity and have more mortality from chronic diseases than other ethnic groups. The researchers carried out this study to investigate the factors influencing the PA in this minority group. They brought some results about the perception of that group related to PA. This study used a qualitative research design employing six focus groups of Mexican Americans with type 2 diabetes. All participants received the same standardized question guide on definitions of physical activity, preferred types of physical activity, and motivators and barriers to physical activity. The participants had a broad perspective of the term PA. Almost all participants considered the PA not only leisure time activities but also work and home-related activities. Also, some participants made a relationship between their work and PA. For example, one participant didn't like walking before; however, after she learned that she had diabetes, she used walking as a daily routine. Most participants identified PA as

housework, yard work, shopping, and car repair, and they associated PA with jumping, swimming, aerobics, and yoga but mostly preferred walking.

All these PA definitions were made for specific reasons, and each should be considered within its particular conditions. Previous descriptions remained limited regarding sports with educational settings, and a new definition needs to arise because of changing needs and interests over time. Especially educators, researchers, and policymakers need a new and broader definition of physical activity. Piggin (2020, p.5) provided the latest and more general definition of physical activity below:

"Physical activity involves people moving, acting and performing within culturally specific spaces and contexts, and influenced by a unique array of interests, emotions, ideas, instructions, and relationships."

According to Piggin (2020), there are various benefits of this extended version. First, the new definition gives priority to people moving over muscle moving. To be more precise, the new definition takes precedence over person rather than skeletal muscles or energy to save the inclusivity. Second, the new description values the productive and creative potential of physical activity. It does that by discussing acting and performing as well as moving. Third, the new and broader definition could be helpful for policymakers to reframe policy interventions.

2.2.Physical Activity Guidelines

There is a consensus that many chronic illnesses such as pulmonary heart diseases, asthma, obesity, and diabetes have begun to be seen an early age (Ebbeling et al., 2002; Curry et al., 2006; Skinner et al., 2007). Early prevention of these chronic diseases is as essential as their treatment. Therefore, preventive strategies should start as early as possible (Walter, 1989; Lobstein et al., 2004). Because physical inactivity is recognized as an essential determinant for chronic diseases, there is a need for a guideline to determine physical activity principles and maintain them for lifespan properly. At this point, according to changing conditions, living standards, and unique traditions, each country has its physical activity guideline.

World Health Organization published a physical activity guideline in 2020. According to the guideline, for children and teenagers aged between 5- 17 years, physical

activity can be assumed as a part of recreation and leisure time activities (games, sports, or planned exercises), transportation (walking or cycling), and household chores. The physical activity guidelines of WHO (2020) for ages 5 and 17 are listed below;

1. Children and adolescents should get at least 60 minutes of moderate-to-vigorous exercise a day, on average, mostly aerobic, physical activity, across the week.
2. Vigorous-intensity aerobic activities, as well as those that strengthen muscle and bone, should be incorporated, at least 3 days a week.
3. Children and adolescents should limit the amount of time they are sedentary, especially screen time for recreational purposes.

WHO (2020) also claims good practice statements;

1. Doing some physical activity is better than doing none.
2. Even a little physical activity will support their health for children and adolescents who do not follow physical activity recommendations.
3. Children and adolescents should start by doing small amounts of physical activity, and gradually increase the frequency, intensity, and duration over time.
4. It is essential to provide all children and adolescents with safe and equitable opportunities and encouragement to participate in enjoyable physical activities that are appropriate for their age and ability.

Many valuable studies have proved the impact of regular physical activity. Based on this evidence, in the USA, Society of Health and Physical Educators has published a guideline named as Active Start; A Statement of Physical Activity Guidelines for Children From Birth to Age 5 (Clark et al., 2002). The guidelines for preschoolers are listed as below.

•Preschoolers should participate in at least 60 minutes of structured play per day.

•Preschoolers should participate in unstructured play that will last at least 60 minutes or more each day, and should not be sedentary for more than 60 minutes at a time, except when sleeping.

•Whenever possible, preschoolers should spend time indoors and outdoors following safety standards to participate in activities that support major muscle groups.

•Parents and caregivers who undertake the health responsibilities of children are also responsible for understanding the importance of physical activity and providing physical activity opportunities to the child for structured and unstructured physical activity. Physical activity guidelines of developed countries are presented in Table 2.1.

Table 2.1 Comparison of physical activity guidelines of developed countries

Descriptors				PA Principles				Sedentary Behavior Recommendation	Reference link
Country names	Issuing Authority	Date of Release	Age Group	Duration	Intensity	Frequency	Advices		
Finland	National Institute for Health and Welfare	2008 (Physical Activity) 2015(Sedentary Behavior)	7-18 years	At least 1 to 2 hours	Physically active	Every day	Variety of ways available for each age group. At least 2 hours for 7 years, and an hour for 18 years old. The daily physical activity should consist of at least 10 min of brisk exercise bouts.	Not sit continuously more than one hour. Avoidance of more than two hours straight. Screen time not exceed two hours in a day.	https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/69943/978-952-00-3417-7_korj.pdf?sequence=1&isAllowed=yhttp://julkaisut.valtioneuvosto.fi/handle/10024/74710
Netherlands	The Health Council Netherlands	2017	4-18 years	At least 60 min	Moderate to vigorous	Moderate intensity-every day Heavy intensity-at least 3 times a week	Activities that strengthen muscle and bone at least 3 times a week. Avoid spending long periods sitting stabile.	Avoidance of sitting for long periods of time.	https://www.healthcouncil.nl/documents/advisory-reports/2017/08/22/physical-activityguidelines-2017
France	French Agency for food environmental and occupational health safety	Updated 2016	6-11 years 12- years	At least 60 min for both age groups	Moderate to vigorous	Every day	1-hour daily endurance and flexibility exercises for both groups. Arrangement of sleeping time. At least 20 min bouts of at least 3 sessions for each exercise.	Limited screen time; less than 2 hours for 6-11 years, restrained time in front of a screen and avoidance of sitting same position more than 2 hours	https://www.anses.fr/en/content/physicalactivities-%E2%80%93-ourrecommendationschildren-andadolescents
New Zealand	Ministry of Health New Zealand	2017	5-17 years	At least 60 min	Moderate or vigorous	Moderate intensity-every day Vigorous intensity-at least 3 times a week	Activities strengthening bones and muscles at least 3 days a week. Light physical activities for several hours in a day. Getting enough and uninterrupted sleep.	Less than 2 hours in front of screen for resty in a day. Sit less, move more and have break ups between sitting periods.	https://www.health.govt.nz/yourhealth/healthyliving/food-activityand-sleep/physicalactivity/how-muchactivityrecommended

Countries could have specific PA guideline based on their living standards. There is a rising trend about PA objectives among developing countries as much as developed countries. The Physical Activity Guideline of Turkey was prepared with the cooperation of many experts from different fields in 2014. The guideline has offered some pieces of advice for children aged between 5-17 years to increase mobility;

- Children's eating habits should be regulated, and consumption of fast food, carbonated drinks, and sugar should be limited as much as possible.
- Children should be allowed to take an active role in household chores.
- Children should be encouraged to use stairs instead of elevators, and adults should be role models in this regard.
- The time children spend in front of electronic devices such as televisions, tablets, and phones should not exceed 2 hours.
- Outside school hours, children should be allowed to play outside.
- The recreational activity options suitable for the child should be explored by adults, and the child's participation in activities should be supported.
- Brochures explaining the importance of physical activity should be distributed to children in schools.
- The number of sports fields and clubs in schools should be increased, and children should be encouraged to participate in these activities.
- Teachers should guide children to participate more in physical activities, and finally, the teacher should reinforce the children.

This guideline suggests doing regular PA for at least 60 minutes daily at moderate to vigorous intensity. For vigorous-intensity activities, it proposes at least three times a week. Moreover, the guideline includes activities for maintaining flexibility and strengthening bones and muscles. According to the guideline, a well-planned PA program should consist of four main activity types; endurance, muscle and bone strengthening, weight lifting, balance, and stretching. This guideline also indicates that shorter PA activities provide benefits for inactive children.

Table 2.2 displays a comparison of physical activity objectives of other developing countries.

Table 2.2 Comparison of physical activity guidelines of developing countries

Descriptors			PA Principles					Sedentary Behavior Recommendation	Reference link
Country names	Issuing Authority	Date of Release	Age Group	Duration	Intensity	Frequency	Advice		
Ghana	Ministry of Health	2009	Children and adolescents (Age not specified)		Moderate to vigorous	Every day	Activities to strengthen bones. 3 days a week. Vigorous aerobic exercise at least 3 days a week.		http://alwag.org/education/courses/pa-guide.pdf
South Africa	Department of Health Republic of South Africa	2013	5-17 years	At least 60 min	Moderate to vigorous physical activity	Every day	Children should perform activities strengthening bones and muscles 3 times a week.		http://www.fao.org/3/a-as842e.pdf
Mexico	National Council for Science and Technology and Board of Directors of the National Academy of Medicine in agreement with the WHO	2015	5-17 years	Should compile at least 60 min	Moderate or vigorous or combination of both	Every day	Strengthening muscle and bone exercise at least 3 times per week. More than 60 min daily PA has additional benefits. Daily physical activities should include aerobic ones such as walking, running, dancing etc. PA can consist of several bouts throughout the day (e.g. twice of 30 min bouts)		http://guiasalimentacionyactividadfisica.org.mx/wpcontent/uploads/2015/10/Guiasalimentarias-y-
Uruguay	Ministry of Public Health & National Secretariat of Sport Ministry of Health	Unknown (note document cites a reference from 2016)	5 years to pre-pubertal and adolescents	At least 60 min a day	Moderate to vigorous	Every day	Exercises that help to strengthen muscles and bones. Include strength activities at least twice a week.	Reduce the sitting time in front of screens or mobile phones and tv.	https://www.gub.uy/ministerio-salud-publica/comunicacion/publicaciones/guia-actividad-fisica

2.3. Importance of Physical Activity for Children

Physical activity is associated with countless health benefits across the lifespan (Hamer et al., 2009; Piercy et al., 2018). For school-age children, physical education and sports classes could be seen as a great chance to participate in sports activities and to be supported in different development areas. When the inclusive characteristics of physical education classes are taken into consideration, it could be drawn that PES courses are appropriate means of developing personal and social skills such as personal and social responsibility, cooperation and other prosocial skills (Miller et al., 1997).

As one of the crucial social skills, collaborative learning could be a matter of physical education courses. Luptáková and Antala (2017) aimed to investigate what secondary school students learn from and think about group projects in PE courses. A total of 94 secondary school students participated in this study and were given the assignment to create a video in a PE course as a small group. The participants filled out a questionnaire to examine students' learning outcomes, attitudes, and participation in the project. Based on the results, most students reported improvement in determining social skills and better relationships with their teammates. Moreover, there were some significant differences in the views of the students according to age and gender.

The study conducted by Neely and Holt (2014) has contributed to the relationship between physical activity participation and social skills from a family perspective for younger age groups. The researchers aimed to examine parents' attitudes on the benefits of sports participation for their young children. Twenty-two parents (12 mothers, ten fathers) of children aged 5–8 years participated in an individual semi-structured interview. All parents have reported that their children gained personal (fair play/sportspersonship, positive self-perceptions, personal responsibility) social (engagement in school, learning to respect authority, teamwork, cooperation, friendship), and physical (health and well-being, development of fundamental sport skills) benefits of sport participation. All participating parents thought their children gained self-confidence and gained positive perceptions about themselves through sport. In addition, all parents claimed that children improved in social skills by working as a group and cooperating with teammates.

As participation in sports activities gains physical benefits and improves social skills, PA engagement also supports enhancing motor skills. Ericsson and Karlsson (2011) conducted a study that hypothesized that regular extended physical activity would improve students' motor skills. In this study, while the control group maintained a regular schedule, including two physical education and health courses, the intervention group was offered five physical education and health and motor training courses per week. If needed, an individually adapted motor training course was offered one hour per week for the intervention group. The statistical analysis of the study confirmed the hypothesis of the study. The results indicated that extended physical activity improves the motor skills of students. Extended PA was of great importance for individuals with large and small deficits in motor skills in the intervention group. At the same time, there were no significant differences between pretest and posttest for students with large and small deficits in motor skills. This study is essential to realize that if there is not offered any remediation program for students, these deficits will keep as problems for them for many years.

Parfitt and Eston (2005) conducted a study to explore the relationship between habitual physical activity and psychological well-being in children from three primary schools in North Wales. In this study, participants used pedometers to measure physical activity. Each night, their parents recorded the number of counts and reset it to zero for the next recording day. To assess the well-being status of children, three questionaries were applied to the children: anxiety, depression, and self-perception. The data gathered from 70 children supported the hypothesis that there was a relationship between physical activity and well-being.

2.4. Physical Activity Behaviors of Children during the COVID-19 Pandemic

The COVID-19 restrictions, such as the closure of parks or cancellation of sports activities, could limit children's physical activity participation and prevent them from reaching the recommended PA level. The study by Dunton, Do, and Wang (2020) aimed to investigate the effects of COVID-19 on PA on US children aged between 5-13. The data was collected when the strictest rules were in force to prevent the coro-

navirus from spreading. An online survey was used as a measurement tool to get information about children's PA behaviors. Based on the survey results, the level of PA decreased while children's sedentary behaviors increased. This study also concluded that free play and unstructured physical activities were the most common type of PA. In addition to those results, that study found gender differences in sedentary behavior choices. While boys tended to spend time playing video games, girls tended to use electronic devices primarily for leisure purposes such as listening to music or doing video classes with friends.

Xiang et al. (2020) examined the effects of the COVID-19 pandemic on PA habits and sedentary behaviors of Chinese children and adolescents (6-17 years). PA was measured based on Global Physical Activity Questionnaire (GPAQ) developed by the World Health Organization. Totally 2426 children and adolescents participated in the study. Based on valid data gathered from the participants, it was concluded that the average time spent in PA decreased drastically from 540 min/week to 105 min/week. Additionally, the results revealed that children's screen time prolonged during the pandemic, even for leisure.

A critical study (Velde et al., 2020) aimed to analyze the impact of the COVID-19 pandemic on screen time and physical activity behaviors of children in the Netherlands, applying both objective (accelerometry) and subjective (questionnaire) data gathering methods pre- and during-, and post-school closures. For PA data, 62% of participants reported less PA participation. Only 20% of children reached PA levels of 60 min/d compared to 64% in May 2019. In sum, this study indicated that most Dutch children reported lower levels of PA participation during the COVID-19 pandemic than before.

Another study, done in Spain (Medrano et al., 2021), aimed to examine the effects of the COVID-19 refinement on the lifestyle behaviors of Spanish children. The participants were selected from the MUGI Project, a longitudinal study to record PA behaviors and lifestyle changes of children in Spain. Before the pandemic, PA behaviors, screen time, social vulnerabilities, dietary habits, and vital statistics such as height or weight were assessed by objective methods, including questionaries or fitness tests.

After the pandemic, children and parents filled the online questionaries at home because of extreme conditions. When the results of the confinement process were compared, it was concluded that PA decreased while screen time increased.

A recent study (Orgilés et al., 2020) investigated the impact of COVID-19 quarantine on children from Western countries, Italy and Spain. The primary caregiver of children aged 3 to 18 received an online questionnaire. The questionnaire was structured under four basic categories; sociodemographic of parents and children, changes in the emotional status of children, parents' perception of family integrity affected by the COVID-19 pandemic, and children's routines, including screen time, physical activity, or sleeping habits. One thousand one hundred forty-three parents of Spanish and Italian children completed the survey, and 85.7% of the respondents observed changes in emotional status and behaviors in their children during the quarantine. The most frequent problem that children face with was concentration issues and boredom. Although there were differences between Spanish and Italian children regarding psychological proceeds, there is a consensus on attending physical activities less, spending more time in front of the screen, and sleeping more during quarantine.

A substantial qualitative study was conducted in Canada to explore how parents experienced COVID-19 restrictions and how their children's movement behaviors were affected by them (Riazi et al., 2021). Semi-structured interviews were conducted with 29 parents of children (5-11 years old) in Ontario and British Columbia. These one-on-one interviews focused on overall changes in children's movement behaviors. The study concluded that these changes were common to all families and described as three prominent themes; loss of structured activities, limited access to PA destinations, fewer opportunities for outdoor play, and increased screen time due to the pandemic.

Perez et al. (2021) conducted a qualitative study to understand and go into detail about parents' views about how the COVID-19 shelter-in-place mandates affected children's physical activity. Three hundred twenty-one parents living in the United States of America answered an open-ended prompt to describe the PA level of their children during COVID-19 shelter-in-place mandates. This study came up with four basic themes; children's opportunities for physical activity, access to outdoor activity spaces, access to exercise and play equipment, and parents' support for children's physical activity. This study showed that shelter-in-place mandates restricted opportunities for

children's physical activity. Upon examining this data, families with lower income had less access to outdoor space, and relatedly, those children had fewer opportunities for physical activity participation. These findings supported the notion that parents from high socioeconomic status could facilitate their children's indoor and outdoor activities by providing PA equipment and private outdoor spaces such as backyards.

According to a study which was conducted in Sweden, the proportion of children who met the PA guidelines during the COVID-19 pandemic was calculated (Nyström et al., 2020). Children's physical activity and sleep hours were measured via accelerometers, while other variables such as screen time, fine/gross motor skills, or executive functions were measured using online questionaries. Based on parental questionaries, although a low proportion of Swedish children met the WHO physical activity guideline, COVID-19 positively influenced the physical activity behaviors of children. The study conducted by O'Kane et al. (2021) aimed to evaluate changes in physical activity, mental health, sleep pattern, and social media use among adolescent girls in Ireland during the lockdown. Two hundred eighty-one female pupils attended the study, and the data were gathered via questionaries. As a supplement to the questionnaire, 16 participants were interviewed. Results of this study showed no significant difference in the physical activity level of pupils, but there was a decline in health-related quality of life and motivation for exercise. Moreover, the pupils reported trying to find new forms of PA and patriciate physical activity with their families.

Kolota and Glabska (2021) approached physical activity studies differently. Their purpose was to analyze the impact of COVID-19 and remote education on children’s and adolescents’ diet and physical activity. The data were gathered from 1334 participants by using a validated questionnaire. Based on the survey results, it could be concluded that the COVID-19 pandemic and remote education positively affected the dietary habits of Polish primary school adolescents. More beneficial dietary habits were observed during the remote education period, which is a higher fruit, vegetable, and water intake. However, increased screen time and eating meals in front of the screen were observed compared to the period before the pandemic. Lastly, the study highlighted that there was no influence on the number of days the adolescents were physically active.

The literature about the effect of the COVID-19 pandemic on children's physical activity levels offers different perspectives with various results. The results of the studies that examined the impact of the COVID-19 pandemic on children's PA levels and screen time behaviors, these studies revealed that while the time spent by children in front of the screen increased, physical activity levels decreased during the pandemic (Dunton et al., 2020; Xiang et al., 2020; Orgilés et al., 2020; Riazi et al., 2021; Medrano et al., 2021). One of the studies examined the relationship between the economic status of families and the physical activity levels of their children (Perez et al., 2021). This study concluded that because families with low financial income cannot provide sufficient physical activity opportunities to their children, the physical activity levels of these children decreased during the pandemic. Another study from Sweden investigated the Swedish children's physical activity level and screen time during the pandemic (Nyström et al., 2020). According to the result of this study, there was a significant increase in Swedish children's physical activity, time spent outside on weekdays and weekends, and screen time during the pandemic. Two crucial studies (O'Kane et al., 2021, Kolota & Glabska, 2021) showed no significant change in children's physical activity levels during the pandemic period. In the literature, it is also possible to find mixed methods studies that integrate quantitative and qualitative designs in a study.

In conclusion, when the relevant literature is examined, it is possible to reach studies that offer different results including positive, negative, or neutral effects of the COVID-19 pandemic on children's physical activity behaviors. The number of these studies should be increased to analyze the pandemic's impact deeply.

2.5. Physical Activity and Outdoor Environment Opportunities During the COVID-19 Pandemic

Different studies examined the relationship between outdoor time and health-related outcomes of it was examined (Saakslahti et al., 1999; Gopinath et al., 2011). Additionally, many studies proved that children's physical activity level was higher when they were outside (Dunton et al., 2011; Klinker et al., 2014; Wheeler et al.,

2010). The COVID-19 pandemic-related closures and stay-at-home restrictions interrupted the daily routines regarding eating habits, sleep patterns, and social relations (Aribogan & Ozturk, 2021).

A recent study (Mitra et al., 2020) explored the changes in the physical activity level of Canadian children and youth (5-17 years). It examined how these changes were linked to residential locations environment. Regarding the changes in behaviors of children and youth during the COVID-19 pandemic, most participants reported a decrease in outdoor activities, including less walking or biking, less outdoor physical activity, sports, and play. In contrast to a reduction in outdoor physical activity, indoor play and screen time increased for most of the attendants. These results aligned with the findings of the other study (McCormack et al., 2020), which examined the relationship between parents' anxiety related to the COVID-19 pandemic and physical activity and sedentary behaviors among Canadian children (5-17 years). According to 345 parents' questionaries, while children's physical activity at home, use of screen-based devices, and screen-based behaviors increased, the amount of playing at parks and in public spaces decreased. In contrast to the results of Mitra et al. (2020) and McCormack et al. (2020), the findings of Guerrero et al. (2020) showed an increase in outdoor PA/sport time in both girls and boys.

A current study done by Hazlehurst et al. (2022) aimed at relationships between park access and mental health for children and parents during the COVID-19 pandemic. Additionally, the study searched for the relationship between park access and the co-participation of parents with their children. According to the study results, park access was associated with lower adolescent internalizing problems. Moreover, the access to park areas was associated with an increase in the days parents spend time with their children.

Jackson et al. (2021) evaluated the effects of the COVID-19 pandemic on adolescents' outdoor recreation participation and well-being. The study was conducted with 624 American adolescents aged between 10-18. The study revealed the declines in subjective well-being of adolescents and participation in outdoor activities. Additionally, adolescents reported that they successfully coped with stress while outside.

When the literature on children's access to outdoor environment opportunities during the COVID-19 pandemic was investigated, different outcomes could be reached.

Some studies found that the pandemic did not adversely affect the children's engagement in outdoor physical activities. However, in some studies, it has been revealed that the pandemic restricted children's access to outdoor spaces and caused adverse health outcomes in children's psychological well-being. In addition, since the pandemic is still an ongoing process, studies on this subject are limited.

CHAPTER 3

METHODS

The major purpose of the current study was to examine the impact of the COVID-19 pandemic on physical activity behaviors of Turkish children aged between 5-12 years old based on parents' reports. This chapters contains the research design of the study, participants, data collection procedures, data collection instruments, data analysis and limitations respectively.

3.1. Research Design

This study used a mixed methods research design to answer the research question. The mixed methods design was described by Tashakkori and Creswell "as research in which the investigator collects and analyzes data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study or a program of inquiry (2007b, p. 4)".

Mixed research methods are gaining more acceptance in the social sciences as a legitimate and standalone research design (Creswell, 2009; Hanson et al., 2005; Tashakkori & Teddlie, 2003). Mixed methods research is used when it is not sufficient to answer a research question with a single research method (Creswell, 2008).

Specifically, an explanatory sequential mixed methods design was used in this study. Creswell (2012) explained that the purpose of using this design was; that while the quantitative results provided a general picture of the research question, qualitative results aimed to expand the study, refine and explain the general picture in detail. In the explanatory sequential mixed methods design, quantitative and qualitative data were collected in two stages and sequentially (Creswell, 2012). First, quantitative data is

collected and analyzed, prioritizing answering the study's questions. In the second phase, qualitative data were collected and analyzed to complete these quantitative data.

3.2.Participants

A total of 205 parents, 165 mothers (80.5%) and 40 fathers (19.5%), participated in this study. Participants were chosen based on inclusion criteria: (1) being a parent of a child aged 5-12 years, (2), children who show typical development, and (3) living in Turkey. Table 3.1. presents the detailed information about the parents' sociodemographic characteristics including education level and employment status.

Table 3.1 Parents' sociodemographic characteristics

Variables	Mother		Father	
	n	%	n	%
Participant	165	80.5	40	19.5
Education level				
Primary school	14	6.8	9	4.4
Secondary school	6	2.9	5	2.4
High school graduate	29	14.1	34	16.6
Associate degree	1	0.5	0	0
Undergraduate degree	105	51.2	102	49.8
Master's degree	30	14.6	33	16.1
Doctoral degree	20	9.8	22	10.7
Employment status				
Employee	114	55.6	184	89.8
Unemployed	67	32.7	7	3.4
Online worker	24	11.7	14	6.8
Total	205	100	205	100

This study was open to everyone in Turkey. Table 3.2 presents the sociodemographic and socioeconomic information of participant families, which includes region, residential area, household type, household income and number of children.

The majority of the participants (n= 142, 69,3 %) participated in the study from the Central Anatolia region, and there were also participants from the other six regions. While majority of the participants participated to the study from metropolis such as Ankara, Izmir, and İstanbul, there were participants from small districts such as Çorlu.

173 (84,4%) of the participants reported that they live in an apartment building, while only 32 of them live in a detached house. The highest income was defined as more than 7500 Turkish Liras in this study, and looking at the total economic income in the family, most of the families (n=143, 69,8%) were from high-income group. Most of the participants (n=109, 53,2%) had two children, and only one family had five children.

Table 3.2 Parents' socioeconomic and sociodemographic characteristics

Variables	n	%
Region		
Eastern Anatolian region	4	2.0
Southeastern Anatolian region	2	1.0
Central Anatolia region	142	69.3
Black sea region	5	2.4
Mediterranean region	5	2.4
Marmara region	21	10.2
Aegean region	26	12.7
Residential area		
Metropolis	165	80.5
City	17	8.3
District	21	10.2
Town	2	1.0
Household type		
Detached house	32	15.6
Apartment building	173	84.4
Household income		
0-2825	4	2.0
2826-3500	11	5.4
3501-5000	23	11.2
5001-7500	24	11.6
7501+	143	69.8
Number of children		
1	64	31.2
2	109	53.2
3	23	11.2
4	8	3.9
5	1	0.5
Total	205	100

The questionnaire included a question about the parent's physical activity information. Only the parent who completed the questionnaire was eligible to respond to this physical activity question. Table 3.3 indicates parents' physical activity information. The number of parents who attended regular physical activity was 59 (28.8%),

while the rest of the participants did not participate in regular physical activities. Of those who do regular physical activity, 37 participants attend single sports activities such as fitness, plates, gymnastics, yoga, and walking. At the same time, 22 parents participated in more than one sports activity such as football, basketball, fitness, and walking. Participants who participated in one sports activity exercised an average of four days a week. On average, those who attend multiple sports activities did practice three days a week. According to the results of the question related to the Turkish Physical Activity Guideline, only 21 (10.2%) reported that they knew the Turkish Physical Activity Guideline.

Table 3.3 Parents' physical activity information

Variables	n	%
Do you do physical activity regularly?		
Yes	59	28.8
No	146	71.2
What type of sport activities do you do?		
Single sport	37	62.7
Multiple sport	22	37.3
Do you know the Turkish physical activity guide?		
Yes	21	10.2
No	184	89.8

Table 3.4. displays the type of schools that children attend at the time of data collection. Before pandemic, the number of children who went to the state school was 98, while this number increased to 105 during pandemic. The school type of three children were unanswered.

Table 3.4 Type of School

Variables	Before Pandemic		During Pandemic	
	n	%	N	%
State school	98	47.8	105	51.2
Private school	90	43.9	78	38
Non-schooling	14	6.8	19	9.3
Non defined	3	1.5	3	1.5
Total	205	100	205	100

Table 3.5. exhibits children's sociodemographic characteristics and health conditions. In the case of more than one child meeting the study criteria in the family,

parents were supposed to consider one of them while answering the questionnaire. Data were obtained from a total of 205 children with an average age of 8.6 years (SD=2.05).

Children were grouped by their ages, the largest group of children was between 7-10 ages (n=103, 50.2%). While 62 children were in the early childhood period (5-6 age), 34 children were at the secondary school level (11-12 age). One hundred sixteen (56.6%) of the children were boys, while 89 (43.4%) of the children were girls.

86 of the children had online physical education and sports courses. Online PES courses lasted an average 2 hours per week. Parents reported that generally warming and stretching activities, gymnastics, and games were the subject of these courses.

Table 3.5 Children's sociodemographic characteristics and health conditions

Variables	n	%
Gender		
Girl	89	43.4
Boy	116	56.6
Age group		
Early childhood period (5-6 ages)	62	30.2
Primary age group (7-8-9-10 ages)	103	50.2
Secondary school age (11-12 ages)	34	16.6
Non-defined	6	2.9
Does your child attend online education?		
Yes	123	60
No	82	40
Does your child have online physical education and sport courses?		
Yes	86	41.9
No	119	58.1
Does your child go to school?		
Yes	123	60
No	82	40
Does your child have chronic disease?		
Yes	16	7.8
No	189	92.2
Which one/ones does your child have?		
Asthma	1	0.5
Food allergy	3	1.5
Eye diseases	2	1
Cardiovascular diseases	2	1
Allergy	1	0.5
Others	7	3.4
Has your child had the COVID-19?		
Yes	24	11.7
No	181	88.3
Grade		
Pre-school	63	30.7
1	23	11.2
2	23	11.2
3	37	18
4	23	11.2
5	18	8.8
6	18	8.8
Total	205	100

3.3.Data Collection Instruments

3.3.1. Online Survey

3.3.1.1.Development of Online Physical Activity Survey

In this study, as a quantitative data collection, a survey method was used to gather information about the effect of the COVID-19 pandemic on children's physical activity behaviors (APPENDIX A). Survey research was defined as "the collection of information from a sample of individuals through their responses to questions" (Check & Schutt, 2012, p. 160). Surveys are data collection techniques that allow researchers to access different types of information quickly and inexpensively. Baştürk and Taştepe (2013) claimed that although surveys are so common, surveys provide a benefit if only they are used appropriately. They claimed that the preparation and implementation phases of survey design must be well planned and should be meticulous. That is, survey preparation requires a specific hierarchical order. There are steps to be followed to ensure this order which also followed in this study; (1) identifying the research problem, (2) reviewing the literature and preparing item pool, (3) writing survey items, (4) consulting an expert, (5) applying a pilot study, (6) revising the survey and (7) applying the survey to the sample. After completing these steps, the survey was applied to the sample group.

Cohen et al. (2002) listed the ethics rules while applying the survey, which was also followed while using the questionnaire in this study;

- The participants should be informed that they have a right to withdraw from the study anytime they want.
- The participants should be guaranteed that they would never be affected negatively by participating in the study.
- The participants should be ensured that their answers would be seen only by the researchers; their responses be used only for the study and scientific purposes; never shared with third parties; never indicate the participants' identities in the study.
- The survey questions should not be threatening, offensive to personal rights, and interfere the private life unless necessary.

- Volunteering should be the basis for answering the questionnaire; no one should not be forced to fill the questionnaire.

An essential advantage of the web-based survey is saving time and money (Schmidt, 1997). Schmidt (1997) stated that web-based surveys can eliminate the use of papers; thus, the cost of the web-based survey is low. The other crucial advantage of using a web-based survey is the completion of the questions. Google Forms offer an option for each question to be completed before submitting the questionnaires.

To eliminate the access issues of participants, telephone calls were provided as an option for participants. For those who did not have an available internet connection, phone calls were made to collect data. The lack of internet connection could be considered as a limitation of this study, as also stated by Wright (2005). The other limitation of the study is the risk of unanswered questions. Although Google Forms offered an option for every question to be answered, some questions required open-ended answers. It was a disadvantage that participants left these questions unanswered or responded outside of the requested format. For example, there was a question asking about the weight of the child. While most of the families answered this question in number format, only two participants left this question unclear. In this way, uncertain answers make the analysis of the data difficult. Since personal information or identities were not asked in the questionnaire, it was not possible to reach the height information of these two children, and the height data was calculated incompletely. Schmidt (1997) identified this case as a potential pitfall while conducting survey research on the Web.

To create the questionnaire, first of all, the literature on the subject was searched, and relevant studies were examined in detail. Based on the questionnaires in the related studies, an example of a questionnaire was developed regarding the research questions. The survey questions were examined together with the main researcher and another expert who has been experienced in the field of physical education for ten years. Then, the expert gave feedback on the questions to ensure understandability and clarity. Later on, it was consulted three experts in the field to get feedback on the content validity. Based on the feedback given by the experts, the questionnaire was put into the final form (Büyüköztürk, 2005).

The online survey was developed on an online platform by using Google Forms. The online survey was communicated through social media such as Instagram or Facebook. Moreover, via WhatsApp and e-mails, it was shared with personal contacts of the research group members, relatives, and inner circle. The participants were invited to the study through the snowball sampling technique. Crouse and Lowe defined snowball sampling as "a sampling method used by researchers to generate a pool of participants for a research study through referrals made by individuals who share a particular characteristic of research interest with the target population (2018, p.1532)". For this study, the participants were requested to forward the questionnaire to those who were eligible and met the inclusion criteria of the study. Moreover, some participants shared the personal information of those who could participate in the study, and the researcher contacted them directly.

3.3.1.2.Content of the Online Survey

This survey was filled out by one of the parents. The online questionnaire first gave detail about the researcher and briefly explained the study's goal. In the introduction part, the participants were informed about the privacy of personal rights and the use of data for scientific purposes. In the end, the participants thanked them for their study attendance.

The online survey included two main sections; demographic and physical activity part. Parents' educational background, employment status, residential area, and household income were asked for the parents' demographic part. Age, height, weight, and grade were the questions about children's demographic part. Class hours, school type, and physical education classes were also included in this section. Moreover, the type and time of physical education courses were needed to answer to examine the children's activity level. At the end of this part, it was asked about any kind of sports club that the child attends with the type of sport and the duration of the courses.

The physical activity section consisted of four main parts. The first part included questions about the daily habits of children. The screen time, active play hours, and sleeping patterns were embodied in this part. The second part included questions

measuring the physical activity level of children by asking about outside physical activity opportunities. This section was prepared to compare the situation of the child before pandemic and during the pandemic. Then, the type of outdoor physical activity equipment the child benefited from and the time/frequency that the child spent with this equipment were wanted to indicate. The third part of the survey included questions about indoor physical activity opportunities. The questions were about the use of these opportunities and the frequency of these indoor physical activity opportunities. In the last part of the survey, any kind of leisure time activity and its duration was stated. All these PA questions were separated into two parts: before and during the pandemic. To take parents' attention, 'before' and 'during' words were highlighted with capital letters to pay parents' attention to the detail.

3.3.2. Semi-structured Interviews

3.3.2.1.Theoretical Framework of the Semi-structured Interviews

In this study, as a qualitative data collection, semi-structured interviews were applied for the data collection about the effect of the COVID-19 pandemic on children's physical activity behaviors (APPENDIX B). An interview is a qualitative research technique in which the researcher collects data about the social world by asking questions about the participants' experiences (Savin-Baden & Howell-Major, 2013). As a verbal communication way of data collection method, the purpose of the interview was to obtain in-depth information from the participant about the research topic and to get the participant's views (Fraenkel & Wallen, 2012). For this study, the interview protocol was followed, defined by Savin-Baden and Howell-Major as "a written guide of the process to be followed during the interview (2013)". They listed the interview protocol as the header, the script, the question set, and the closing were the four main parts of the protocol, which were respectively followed in this study during the qualitative data procedure.

To gain complex in-dept information from parents about the children's physical activity behaviors during the COVID-19 pandemic, the semi-structured interviews were conducted by asking open-ended questions. These open-ended questions were the core of the interview because they allowed the parents to express themselves freely

(Savin-Baden & Howell-Major, 2013) and shared their perspectives on children's physical activity behaviors during the COVID-19 pandemic. One of the main advantages of the interview method was the ability to go beyond the interview script and ask additional questions when needed (Savin-Baden & Howell-Major, 2013).

As much as preparation process of the interview, the implementation of the interviews was conducted by considering a set of expectations for the interviewing behaviors explained by Fraenkel and Wallen (2012);

- All participants were respected for their living conditions. Because the participants shared their private life with the researcher, it was important not to criticize their conditions, such as lifestyles or economic conditions.
- Instead of asking closed-ended questions and giving dichotomous answers, open-ended questions were asked to enable the participant to give more detail. The nature of the dichotomous questions limits the participant and does not courage the respondent to talk more.
- Asking one question at a time was another point that was cared about during the interviews. Asking more than one question in a row could cause confusion and distraction for the respondent, and the respondent could forget the former questions. This situation could cause data loss, and the researcher can't receive valid answers.
- During the interview, the interviewees had enough time to respond to the questions, and they didn't be interrupted.

All available participants who filled out the questionnaire were reached and invited to the interview. Those who accepted to take place in the interview process were provided different options such as zoom call, phone call, or WhatsApp call. Only one participant (father) preferred doing face to face interview in the researcher's house due to internet connection problems. While four interviews were conducted through zoom call, three interviews were conducted through phone calls. The respondents were given numbers from one to eight as follows participant 1 (P1), participant 2 (P2), participant 3 (P3), participant 4 (P4), participant 5 (P5), participant 6 (P6), participant 7 (P7), and participant 8 (P8).

3.3.2.2. Content of the Semi-structured Interviews

The interview questions were designed to address the issues in the questionnaire. For content validity, two experts in the motor development field examined the interview and gave feedback about the content. After taking expert opinions, the cognitive interviews were conducted with three parents (2 fathers and a mother). A cognitive interview is defined by Beatty and Willis (2007) as "the administration of draft survey questions while collecting additional verbal information about the survey responses, which is used to evaluate the quality of the response or to help determine whether the question is generating the information that its author intends (p.288)".

The parents were chosen according to the condition that they had never filled out the questionnaire before. Each parent was interviewed separately, and their opinions were recorded during the interview by the researcher, but first, their consent was taken. Collins (2003) claimed that an important part of content validity is that the participants have a similar understanding of the questions as the measurement creator and that the questions do not misinterpret central ideas or miss essential aspects of the research question being investigated. Therefore, the purpose of the cognitive interviewing was to ensure that the wording was appropriate for the content, the participants could easily understand the questions, and the questions reflected the purpose of the study. Based on feedback from parents' cognitive interviews, the questions were reconsidered, and the interview was put into the final form.

The following questions were asked to the parents during the interviews:

1. How did your child's screen-based behaviors change during the pandemic? (These behaviors involve screen time, context, and device usage.)
2. What changes did you observe in your child's sleep pattern during the pandemic? How did these changes affect your child's mental health?
3. How would you describe your child's general physical activity habits during the pandemic?
4. How much did your child benefit from physical activity opportunities in the environment you live in during the pandemic process? (PA opportunities include playgrounds, public courts, sports equipment, etc.)
5. How did you support your child to do a physical activity outside?

6. What did your child do at home during the pandemic? What kind of activities does your child attend? How did you support your child to become physically active at home during the COVID-19 pandemic? What did you do to create appropriate space for free movement?
7. What did the school do to support your child's physical activity during the pandemic? Did the physical activity classes include sports or exercise in distance education or face to face to courses?
8. Do you have something that you want to add finally?

The interviews were conducted precisely with eight parents (seven mothers, one father). The interviews, which lasted an average of 21 minutes, with a minimum of 14 minutes and a maximum of 31 minutes, were completed in four days. The interviews were from different cities, which were Ankara (3), Denizli (3), Çorum (1), and Yozgat (1).

3.4.Data Collection Procedures

An approval from the Human Subjects Ethics Committee of Middle East Technical University (APPENDIX C) was obtained for the study procedures before the data collection. In addition, the consent of participants was obtained (APPENDIX D). The purpose of the study was explained to the participants. Since the study was based on the voluntary participation of the participants, they were informed that they could withdraw anytime in case they did not want to continue with the survey. The participants were also ensured that the online survey was anonymous and not traceable to the identity of participants. The survey data collection process for the online questionnaire started on March 12th, 2021, and lasted an entire year, ending on March 12th, 2022. After completing the quantitative data collection procedures, the interviews with eight parents were conducted to collect qualitative data. That process was completed in a week, beginning May 31th and ending June 3rd, 2022. The member check interviews were done with six participants after completing interviews to improve the study's accuracy, reliability, validity, and transferability.

The survey development process of the study was illustrated in figure 3.1. (Büyüköztürk, 2005).

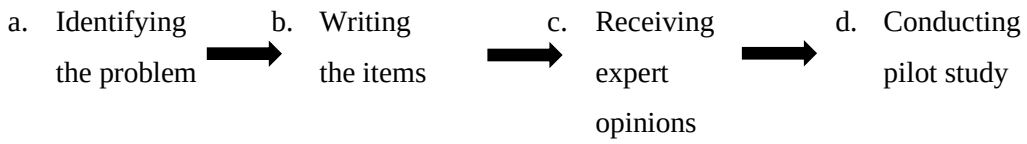

Figure 3.1 Survey Development Process

3.5. Data Analysis

3.5.1. Online Survey

For the quantitative analysis of this study, first, only participants who filled out all parts of the questionnaire were included in the analysis. Three participants were excluded in the data analysis from total of 208 survey responses, as they didn't meet the inclusion criteria of being Turkish children. Descriptive statistics (means, standard deviations, and frequencies) were estimated for four subcategories of quantitative data set by using Microsoft Office /Excel (2021). The statistics were presented as frequency tables and histograms in order to describe participants on variables of the study purpose, which were sociodemographic, children's daily habits involving screen time, active play hours and sleeping time, indoor PA opportunities, outdoor PA opportunities, and physical activity information.

3.5.2 Semi-structured Interview

For the qualitative analysis of this study, a reflective thematic analysis approach was used to identify, analyze and report the patterns (themes) within the data (Braun & Clarke, 2006). Themes could be described as specific patterns based on the interpretation of the dataset (Braun & Clarke, 2019). When deciding the themes, prevalence and keyness were two main principles suggested by Braun and Clarke (2006). Three experts conducted the thematic analysis with backgrounds in physical activity research.

All interviews were transcribed verbatim and anonymized to ensure the anonymity of the participants. The transcripts were imported MAXQDA 2022 version.

The transcripts were analyzed by following 6 phases in the reflective thematic analysis approach suggested by Braun and Clarke (2006):

1. Familiarization with the data
2. Generating the initial codes
3. Searching for themes
4. Reviewing the themes
5. Defining and naming themes
6. Producing the report

The interviews were reviewed by the researcher herself in order to become familiar with the data. That close attention to the dataset facilitated the interpretative skills of the researcher (Lapadat & Lindsay, 1999). After reviewing the manuscripts, the researcher generated the initial codes, which refer to "the most basic segment, or element, of the raw data or information that can be assessed in a meaningful way regarding the phenomenon" (Boyatzis, 1998, p. 63). After determining and obtaining a long list of the codes, these codes were sorted into the potential themes. Two experts were requested to check over the themes. The purpose of the member check was to ensure the accuracy of the themes. As the last step, the completed convenient themes were written up as the reports. By following these phases, qualitative data analysis of the interviews was completed.

3.6. Limitations

While evaluating the study findings, the following limitations of the study should be taken into consideration. The first limitation of this study was the low number of participations in the quantitative data collection part. Only 205 participants were obtained in the study. This was because most people experienced the pandemic for the first time, and they feared uncertainty about the COVID-19 pandemic. Because the pandemic was strange and uncommon for most people, they also didn't want to fill out the questionnaire. The second limitation was distance education. Due to distance education, children stayed at home, and many families stated they did not have time to complete the questionnaire because of the workload at home. The third limitation was limited online physical education and sports courses. It took time to get used to the

pandemic conditions in terms of online education, and online physical and sports courses were not given attention enough. Also, the availability of sports materials was not the same for each family, and the economic situation limited the physical activity opportunities offered to children during the COVID-19 pandemic.

Another limitation of the study was the confinement period. The data collection lasted one year, and at the beginning of the data collection period, there were strict rules about outdoor conditions and social meetings. Through the end of the confinement, the strict rules were released, and people had more chances to spend time doing outdoor activities. This loosening in living conditions could affect the responses to the survey in different periods of the COVID-19 pandemic. Moreover, the season was another limitation of this study. Since children had more opportunities to spend time outside in fine weather, the participants' answers were affected by the seasonal conditions.

Since the online questionnaire was completed remotely, the participant could answer incorrectly or misunderstand the question. Even though the communication information was specified at the beginning of the survey, no one reached the researcher about the survey.

For the interviews, there were difficulties in arranging a meeting time. This was because most of the interviewees were housewives and had limited available time. Besides, during the interviews, there were possible external factors that interrupted the interview. These factors were having small babies at home, having a bad internet connection, and the interviewee's bias. Because of these limitations, the interviews were conducted only with volunteers.

CHAPTER 4

RESULTS

This study aimed to investigate how children's physical activity behaviors are affected by the COVID-19 pandemic. For this purpose, children's daily habits involving screen time, active play hours and sleeping time, indoor PA opportunities, outdoor PA opportunities, and physical activity information were examined. This chapter offers descriptive results based on these four subcategories of quantitative results and four main themes of qualitative results, respectively.

4.1.Quantitative Results

4.1.1. How does the COVID-19 pandemic change the physical activity behaviors of children?

This question, which consists of two parts, aimed to examine how the physical activity behaviors of children (n=205) during the pandemic process were affected by the COVID-19. In the first part, parents were asked about the children’s sports club knowledge. It was seen in Figure 4.1 that neither before the pandemic nor during the pandemic none of the children who took a karate course. There was a child who started a badminton course during the pandemic, whereas there were no children who took the badminton course before the pandemic. The most decrease was seen in ballet, football, and gymnastics courses during the pandemic.

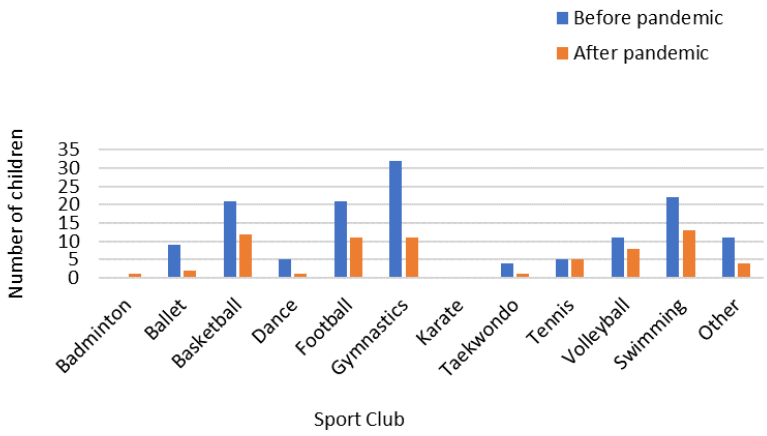

Figure 4.1. Children's sport club information

Before the pandemic, the results of the training days of the children in the sports club were given below in Figure 4.2. It was clearly seen that the number of children who go to the sports club 1-2 was the most in the gymnastics club, basketball, and swimming. None of the children participated in the sports club training for 5-6 days a week before the pandemic.

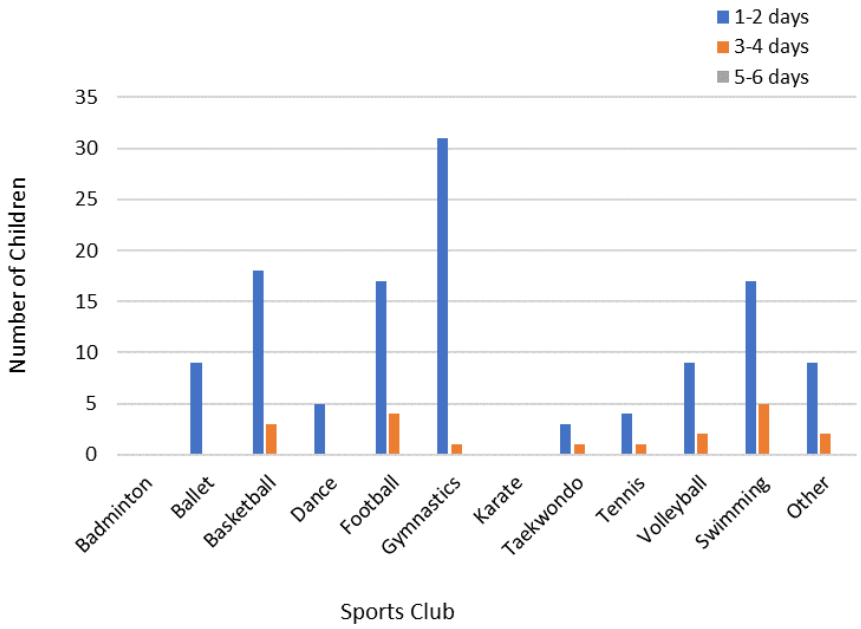

Figure 4.2 Sports club training days before pandemic

Figure 4.3 displays the number of days in which children attended sports club training per week during the pandemic. When it was looked at the results in Figure 4.3, it was clear that there was a decrease in the number of children who went to the

sports club 1-2 and 3-4 days a week during the pandemic. Only one of the children attended the swimming club for 5-6 days a week during the pandemic.

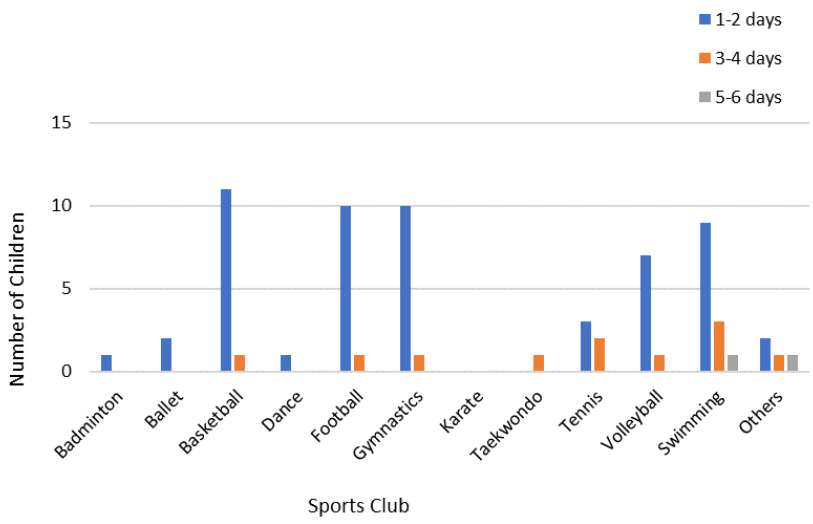

Figure 4.3 Sports club training days during pandemic

In the second part of this question, parents were asked about their children's physical activities except school/sports club for recreational purposes. The answers were clearly stated in Figure 4.4. As seen in Figure 4.4, there was no record of taekwondo for recreational purposes before and during the pandemic. While four children played basketball before the pandemic, this number increased to 6 during the pandemic period. The number of children (6) playing tennis remained the same during the pandemic. The most significant decreases were seen in playground time, jumping on the trampoline, and swimming categories.

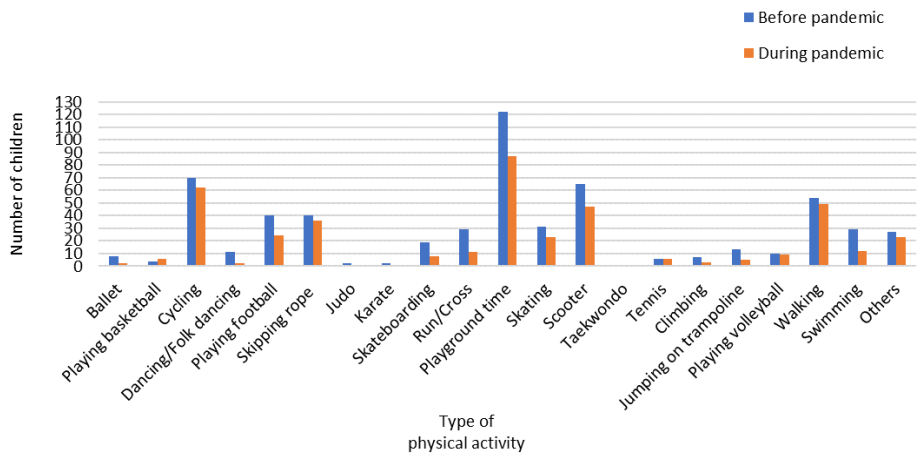

Figure 4.4 Children's physical activity behaviors for recreational purposes

Figure 4.5 displays the physical activity behaviors of children before the pandemic. When it was examined the physical activity behaviors of children before the pandemic, it was seen that children mainly engaged in physical activities, including cycling, playing in the playground, and using scooters at lower intensity levels. There was no record for taekwondo for all three intensity levels before the pandemic.

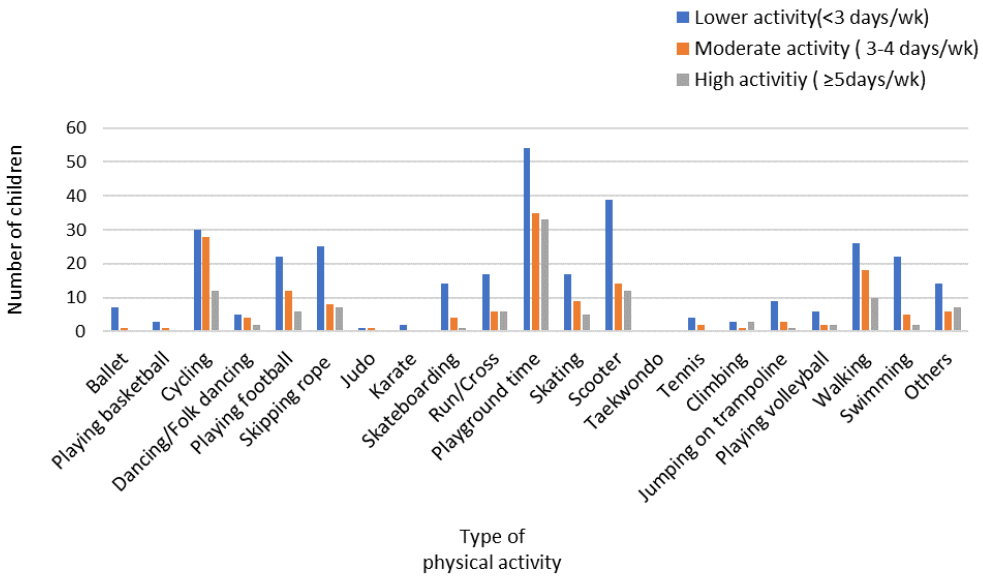

Figure 4.5 Frequency of children's physical activity behaviors before pandemic

Figure 4.6 shows the frequency of children's participation in physical activity during the pandemic. It was observed that the number of children cycling at low and

medium levels was close to each other during the pandemic. There was a considerable gap between the number of children who spent time in the playground at a low-intensity level and moderate-high intensity levels during the pandemic. During the pandemic period, there was a small increase in the number of children walking less than three days a week when compared to before pandemic.

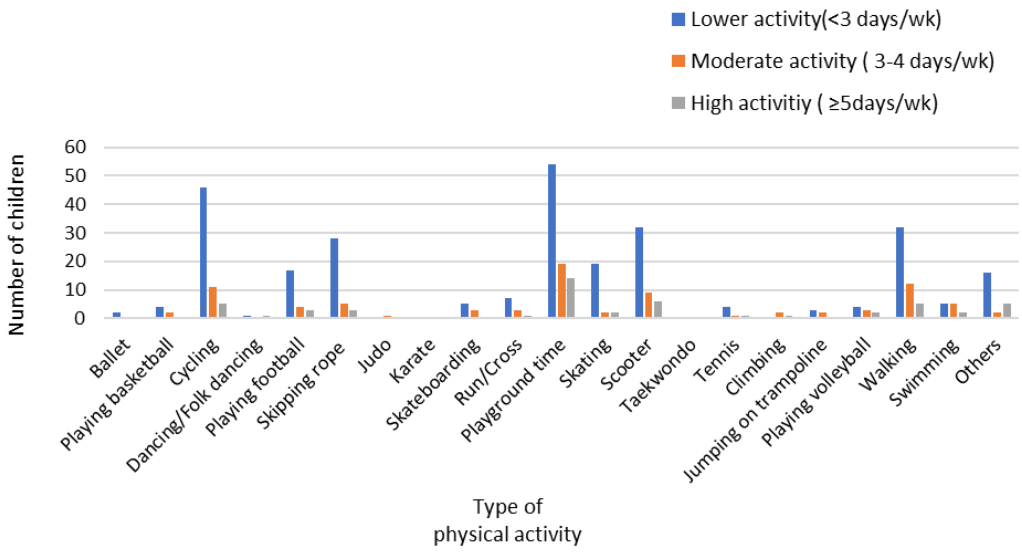

Figure 4.6 Frequency of children's physical activity behaviors during pandemic

4.1.2. Does the COVID-19 pandemic affect children's daily habits, including sleep patterns, active playtime, and screen time?

This question examined the effects of the COVID-19 pandemic on children's daily habits before and during the pandemic, which were listed as screen time, active play hours, and sleeping hours. The results are illustrated in Table 4.1. When "TV hours" was examined, it was observed that there was an increase in the number of children who watched TV for 6-8 hours. Before the pandemic, there weren't any children who watched TV for 6-8 hours. However, during the pandemic, four children were reported to have watched TV for that period. Another finding was that the number of children who spent 0-2 hours on TV decreased from 107 (52.2%) to 81 (39.5%) during the pandemic.

When the hours spent on computer games were analyzed, it was observed that only the number of children who spent 0-2 hours decreased from 166 (81%) to 139 (67.8%) during the pandemic. However, the number of children who played computer games for other hour ranges (2-4, 4-6, 6-8 hours) increased proportionally during the pandemic.

Before the pandemic, none of the children spent more than eight hours on the telephone/tablet. However, one of the children spent more than eight hours during the pandemic. Moreover, before the pandemic, there was no record for 6-8 hours; however, nine of the children (4.4%) spent 6-8 hours on telephone/tablet during the pandemic. It was obviously seen that there was a decrease in the number of children who used telephone/tablet for 0-2 hours from 147 children (71.7%) to 114 children (55.6%) during the pandemic.

When the indoor active play hours were compared before and during the pandemic, it was revealed that there were slight differences in the indoor active play hours (0-2, 2-4, 4-6 hours) spent by the children before and during the pandemic. The number of children who spent 6-8 hours of active indoor play decreased from 11 (5.4%) to 5 (2.4%) during the pandemic. During the pandemic, the number of children who spent 8-10 hours for active indoor play increased from 0 to 5 (2.4%).

When the outdoor activities of children were examined, the number of children who spent 0-2 hours outside was 113 (55.1%) before the pandemic, while this number increased to 128(62.4%) after the pandemic. While the number of children playing outside for 2-4 hours was 67 (32.7%) before the pandemic, this number decreased to 57 (27.8%) during the pandemic. Similarly, while the number of children who played between 4-6 hours before the pandemic was 16, this number decreased to 10 children during the pandemic. There was no change in the number of children playing outside for 6-8 hours before the pandemic. A total of seven children, two before the pandemic and five during the pandemic, left this question unanswered.

When the sleep hours of children were examined, there was an increase in the number of children who slept 7-9 hours, while the number of children who slept more than 11 hours remained constant. There was a decrease in the number of children who slept 9-11 and 11-13 hours compared to before the pandemic. A total of 11 people, four before the pandemic and seven during the pandemic, did not answer this question.

Table 4.1 Children's daily habits information

Variables	Before pandemic		During pandemic	
	N	%	n	%
TV hours				
0-2	107	52.2	81	39.5
2-4	81	39.5	97	47.3
4-6	17	8.3	23	11.2
6-8	0	0.0	4	2.0
Non defined	0	0.0	0	0.0
Computer games				
0-2	166	81.0	139	67.8
2-4	27	13.2	48	23.4
4-6	8	3.8	12	5.9
6-8	4	2.0	6	2.9
Non defined	0	0.0	0	0.0
Telephone/Tablet				
0-2	147	71.7	114	55.6
2-4	46	22.4	64	31.2
4-6	12	5.9	13	6.3
6-8	0	0.0	9	4.4
8+	0	0.0	1	0.5
Non defined	0	0.0	4	2.0
Indoor active play hours				
0-2	71	34.6	73	35.6
2-4	99	48.3	95	46.4
4-6	24	11.7	27	13.2
6-8	11	5.4	5	2.4
8-10	0	0.0	5	2.4
Non defined	0	0.0	0	0.0
Outdoor active play hours				
0-2	113	55.1	128	62.4
2-4	67	32.7	57	27.8
4-6	16	7.8	10	4.9
6-8	3	1.5	3	1.5
8-10	4	2.0	2	1.0
Non defined	2	1.0	5	2.4
Sleeping hours				
7-9	63	30.7	69	33.7
9-11	115	56.1	112	54.6
11-13	22	10.7	16	7.8
13+	1	0.5	1	0.5
Non defined	4	2.0	7	3.4
Total	205	100	205	100

4.1.3. How does the COVID-19 pandemic change the use of outdoor/ environmental physical activity opportunities in the neighborhood?

Figure 4.7 illustrates the change in the use of outdoor physical activity opportunities by children (n=205) compared to the pre-pandemic period. According to this graph, it can be deduced that children benefit less from outdoor physical activity opportunities during the pandemic compared to the pre-pandemic period. A decrease was observed in all types of outdoor physical activity opportunities without exception. The most obvious decrease in the pandemic process was experienced in slide, swing, seesaw, and swimming pools. The slightest decrease during the pandemic was in the football field and volleyball court.

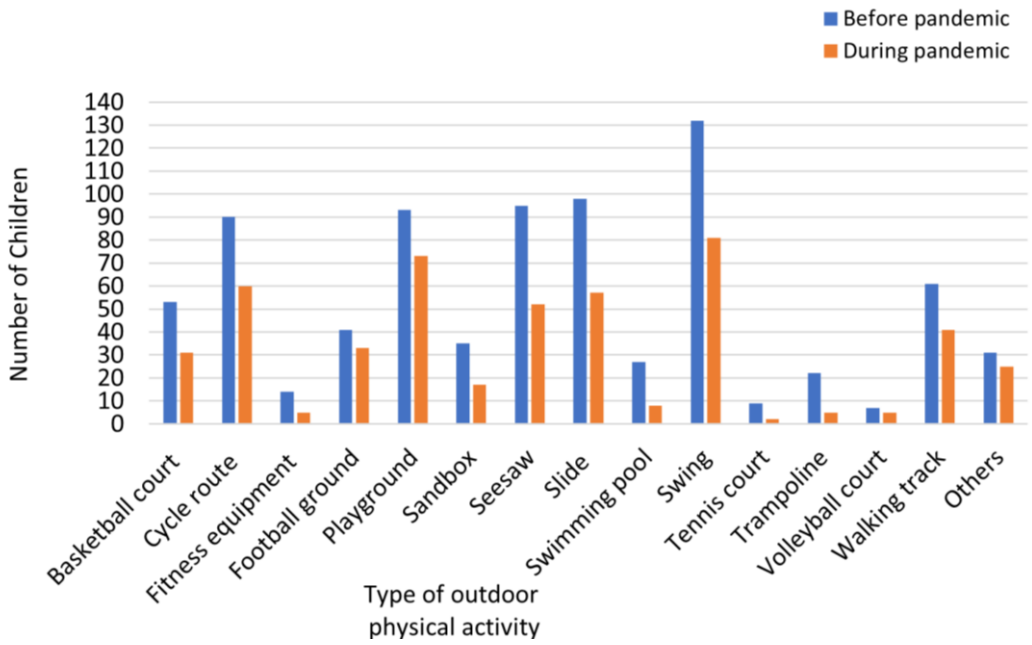

Figure 4.7 Children's use of outdoor physical activity opportunities

To analyze in detail how children's use of outdoor physical activity opportunities was affected by the pandemic process, the frequency of use of these opportunities was also examined. The frequency, which refers to how many days children were actively engaged in these physical activities, was categorized as lower (less than three days), moderate (3-4 days), and high (more than five days) intensity level.

Figure 4.8 displays how often children used outdoor physical activity opportunities before the pandemic. The graph shows that every child at least participated in low-intensity outdoor physical activity before the pandemic. Before the pandemic,

swings, seesaws, and slides were the most frequently used physical activity opportunities for children with lower intensity levels. In moderate-intensity activity frequency, minor participation was seen on the volleyball court (0), while the most participation was seen on the swing (40) before the pandemic. The activities children attended five days or more a week were the swings, playground, and cycle route before the pandemic.

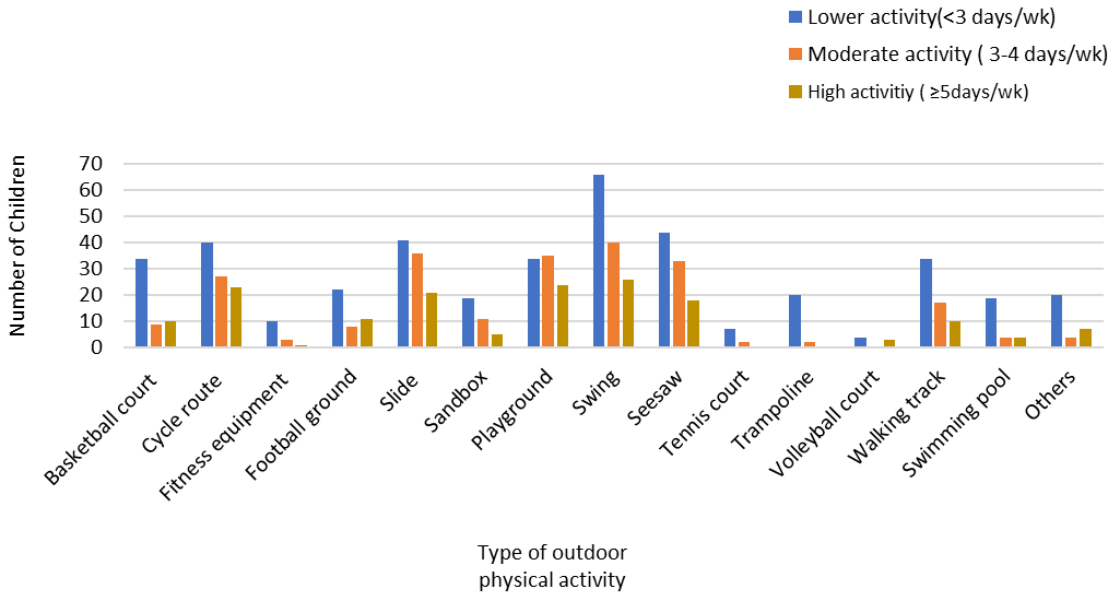

Figure 4.8 Frequency of children's use of outdoor physical activity opportunities before pandemic

Looking at Figure 4.9 below, it was clear how often children benefited from outdoor physical activity opportunities during the COVID-19 pandemic. According to the results in figure 1, it can be clearly said that there has been a severe decrease in moderate and vigorous activity participation during the pandemic. There were slight increases in several activities during the pandemic, such as cycle routes, football grounds, and sandbox. The number of children participating in high-intensity activity, which was high before the pandemic, decreased drastically.

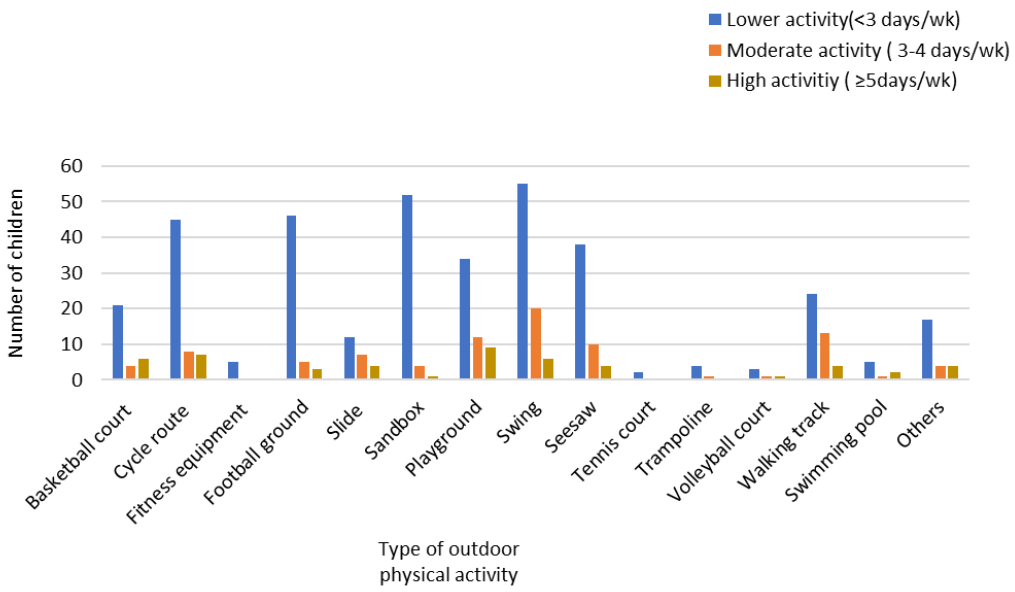

Figure 4.9 Frequency of children's use of outdoor physical activity opportunities during pandemic

4.1.4. How does the COVID-19 pandemic change the use of indoor physical activity opportunities of children?

Figure 4.10 shows how children's (n=205) use of indoor physical activity opportunities is affected by COVID-19. When the use of indoor physical activity opportunities by children during the pandemic process is examined, it is understood that the use of climbing walls and hoops remains constant compared to the pre-pandemic period. As can be seen in Figure 4.10, trampoline use increased to 11 children during the pandemic, which was ten before the pandemic. Compared to the pre-pandemic period, it can be said that the most decrease is observed in the use of the ball and board games during the pandemic period.

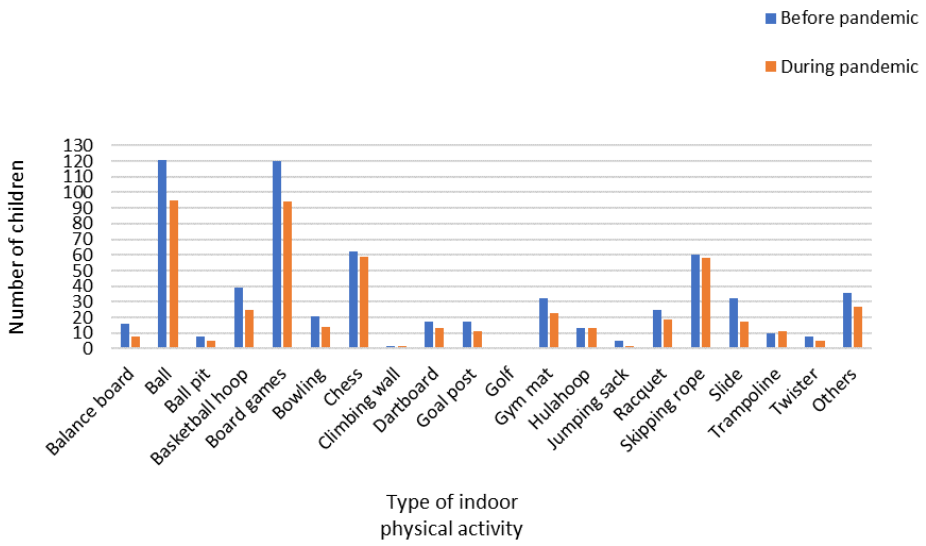

Figure 4.10 Children's use of indoor physical activity opportunities

The frequency was examined to deeply understand how the COVID-19 pandemic affected the frequency of children's use of indoor physical activity opportunities. The results indicating how often children used indoor physical activity opportunities before the pandemic were shown in Figure 4.11 According to these results, before the pandemic, children mostly played with board games and balls at home. The highest frequency was observed in board games, chess, and ball for moderate activity level.

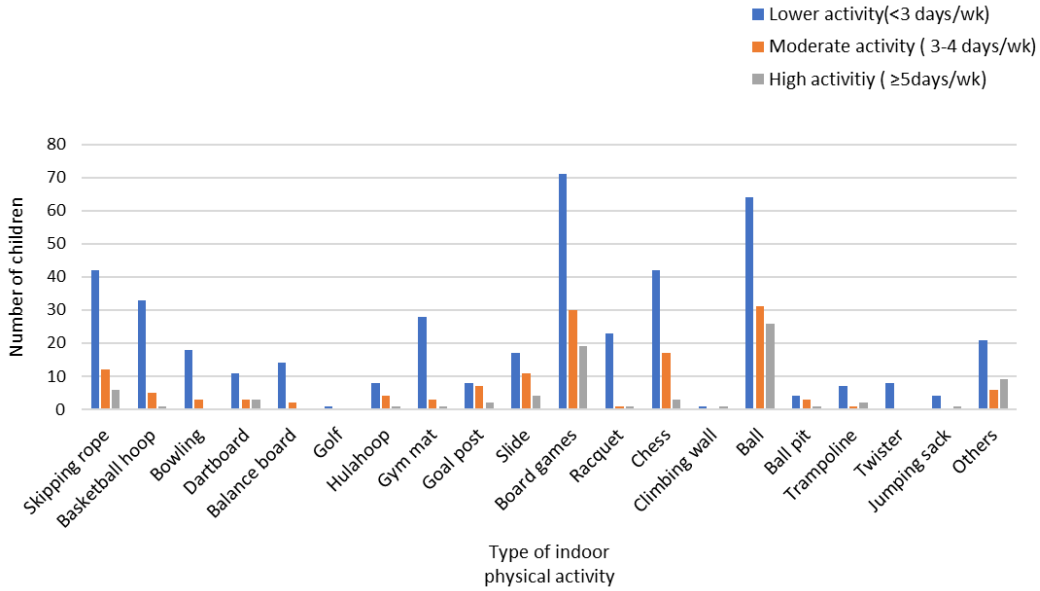

Figure 4.11 Frequency of children's use of indoor physical activity opportunities before pandemic

When examining how often children use physical activity opportunities at home during the pandemic, it was observed that the number of active children at low intensity levels was higher than the other two intensity levels. Figure 4.12 displays that a general increase was observed in children's indoor physical activity levels in lower intensity level during the pandemic.

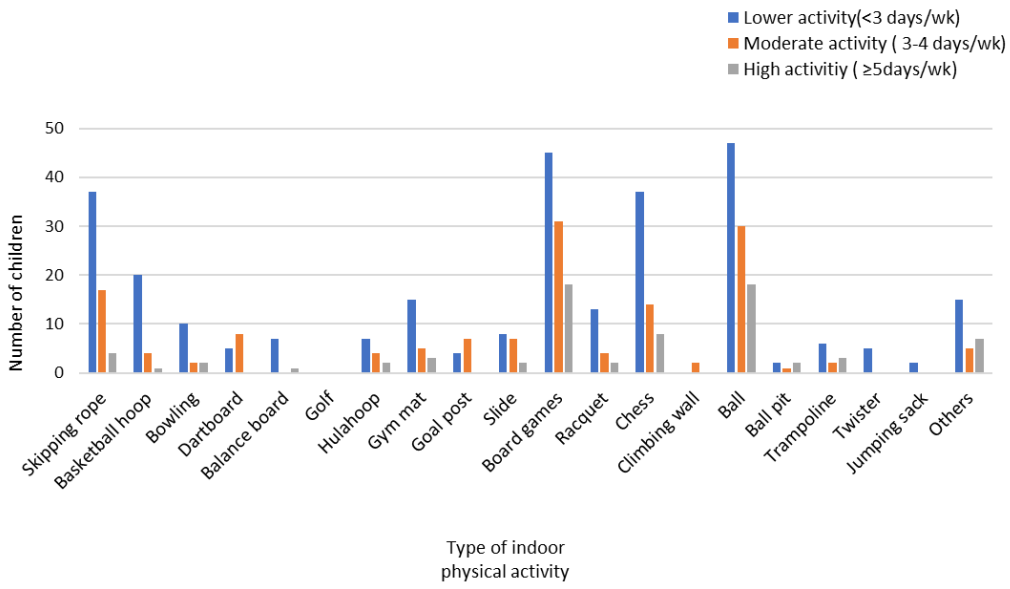

Figure 4.12 Frequency of children's use of indoor physical activity opportunities during pandemic

4.2. Qualitative Results

Parents were assessed on some key aspects in respecting their children's screen behaviors, sleep patterns, and physical activity levels. Based on the reflective thematic analysis, the codes were disposed into broad categories named themes. Four themes were generated to explain how children's physical activity behaviors were affected by the COVID-19 pandemic: 1) sleep patterns during the COVID-19 pandemic, 2) screen-based behaviors of children during the COVID-19 pandemic, 3) physical activity challenges during the COVID-19 pandemic, and 4) behavioral and health consequences of the COVID-19 pandemic. The thematic map of these themes is illustrated in table 4.2.

Table 4.2 Themes & sub-themes

Themes	Sub-themes
Physical activity challenges during the COVID-19 pandemic	Access to outdoor physical activity facilities
	Creating space for movement in the house
	Parental solutions to physical activity obstacles
	Children's demands
	School support for physical activity
Screen-based behaviors of children during the COVID-19 pandemic	Parental control on screen time
	Positive & negative impact of the screen context
	Screen devices usage during the COVID-19 pandemic
Sleep patterns during the COVID-19 pandemic	Sleep duration
	Sleep pattern
	Sleep quality
Behavioral and health consequences of the COVID-19 pandemic	Fear of infection
	Lack of social interaction
	Negative impact of the pandemic on physical health
	Emotional intensity in children

4.2.1. Physical activity challenges during the COVID-19 pandemic

The interview results first presented a noticeable decrease in children's time spent outdoor for physical activity during the COVID-19 pandemic. One of the main reasons for the decreased outdoor time was pandemic-related restrictions. With home confinement, children mostly spend their time at home, and parents face many problems that they didn't experience before. The biggest problem was limited access to outdoor physical activity facilities. With the closure of structured outdoor PA settings (e.g., parks, playgrounds, courts), outdoor facilities were suddenly unavailable for most families during the COVID-19 pandemic. The closures of physical activity facilities created many difficulties for families to find spaces where children could be physically active.

Fortunately, many parents were aware of the importance of physical activity, and they defined how they tried to put PA into children's daily schedules despite the difficulties. During the interviews, parents clarified how stimulating the physical environment was for their children to move freely and become independently mobile. Therefore, they provided both indoor and outdoor physical activity opportunities to their children. All families tried to engage the physical activity in children's daily routines. Only the families who had available backyards were able to grand their children the freedom of movement or play outside without concerning the pandemic rules such as social distance or masks. Participant 6 expressed their experiences about having available backyard opportunities:

> *Frankly, the pandemic did not affect us much because we had a garden, and my son spent time in the garden with his siblings.*

Similarly, P2 -a mother of two school-aged children- described how much outdoor play opportunities were meaningful in terms of children's physical activity level:

> *We didn't have a lot of difficulties about reaching the outdoor physical activity opportunities; we didn't have much hardship during the pandemic. We didn't feel like we were living in prison during the pandemic because we had a house with a garden. Also, our neighbor was suitable for children to go and play together. So, we didn't have many difficulties with physical activity.*

Also, P8 shared the advantage of living in a small neighborhood and stated that:

> *Since we live in a small neighborhood that is not very crowded, we were able to go out even during the restriction period. We had the opportunity to walk around the neighborhood on the condition that we must wear masks and keep a social distance. Apart from that, we spent time in our garden. Having a garden was our advantage. My girl got in touch with the land. She dug the ground. We accompanied her. We planted fruits and vegetables.*

Although not all families had the same opportunities, they made a great effort to support their children to do a physical activity outside as much as possible. When the pandemic rules were bent, the families immediately took action to support their children in attending physical activities outdoors. While some families benefited from

the housing estate's outdoor opportunities, such as courts and playgrounds, some described the indoor settings and how they attempted to arrange the house to create space for movement. For example, the father of eight years old girl (P3) explained both indoor and outdoor settings where they live:

> *Since our house is a detached house, we have our garden. She often spent time with the animals in the garden... inside the house, we changed the design of the living room to make room for her. We changed the direction of the seats and opened more space for my daughter.*

Similarly, P1 defined the home settings:

> *Since our house is spacey, there is a penthouse upstairs. We were able to play football there. We had the ball. We were playing football.*

The interviews highlighted that all families tried to do physical activity with their children, both indoor and outdoor, within the bounds of the possibility. While some families did a physical activity with their children, such as jumping the rope (P4, P7, P8), walking around the neighborhood (P5, P6, P8), and riding a bike (P1, P6, P8), some families directed their children to play traditional games together such as hopscotch (P4), cat and mouse (P3, P7) or hide and seek (P7, P8). Also, to reduce the stress level caused by the pandemic, parents stretched the home-based rules and let their children move freely at home (P4, P6). Additionally, families tried to teach their children new games such as chess to spend quality time during the home confinement (P3).

Another problem families faced during the closure period was being unable to meet children's demands efficiently. Especially early in the pandemic, there were strict rules imposed to stay at home for a long and undetermined period. As a result of sustained restriction, children couldn't discharge, and they sought ways of spending energy. Participants 1, 3, and 8 shared similar experiences about their children's demands at home during the COVID-19 pandemic and explained:

> *My child always wanted to run, jump and play at home. S/he wanted to jump on a chair and shout while jumping. S/he also wanted to play ball at*

home. I didn't let her/him do all this because I worried the neighbors would be disturbed. I tried to find other ways to do all of this.

Participant 5 expressed that her girl wanted to meet and hang out with her friends. However, because of the risk of infection, she didn't let her child to go out and meet with her friends. Similarly, P7 described that her girl wanted to go to the park. If she wouldn't go to the park, she got angry with her parents. Differently and contrary, participant 6 shared that her son wanted to spend time with screen devices. Limited movement space at home was another concern that was explained by participants 3 and 7.

Overall, while families expressed difficulties over decreased physical activity levels and less spent time outdoor, they found effective ways to keep their children busy. Almost all parents described the new materials they bought for their children during the COVID-19 pandemic to support their children at home. Participant 1 expressed how new materials helped her son to release energy during the confinement period:

I bought a skate. Apart from skate, I also bought a trampoline. The trampoline really worked. It helped him to burn out the extra energy. He could jump limitless on the trampoline and scream out upstairs. Thus, I was not concerned whether the neighbors would be annoyed because of us.

Parents similarly reflected on their children's needs by providing age-appropriate materials such as basketball (P2), ball (P3), Lego (P4), jigsaw puzzles and books (P7), and coloring books (P4). Also, participant 8 appreciated the opportunity that her girl gained a new hobby during the pandemic, and the activities that the whole family engaged in increased:

She was dancing in company with the songs of foreign music groups. Thus, she remained physically active and became familiar with English. Also, she gained body flexibility. She gained a new hobby which is making bristles from beads. We also made arrows by ourselves. She spent a lot of time with the arrow in the garden.

Generally, increased family time was considered a favorable and unexpected benefit of the pandemic. Families tried to find out new activities that all family members could engage in. All of these parental solutions were applied to increase children's physical activity level, make them active, especially during the stay-at-home period, and protect them from the unwanted effect of the pandemic, especially harmful outcomes of screen addiction.

In addition to family support, the activities done by school management was examined in the interviews. While only one parent (P6) claimed that there was no school support to incorporate PA into the children's educational program during the COVID-19 pandemic, the rest explained in detail how the school administration obtained PA into the daily routines of children. There were various ways to adapt to the situation because of transmitting distance education. Participants 1 and 8 spoke about the online physical education and sports classes. They defined the course content as:

> *In physical education and sports classes, the children did a physical activity in the guidance of the teacher. These activities generally included jumping, stretching, exercise, sit-ups, bending, and getting up.*

Some schools adjusted the lesson plan according to the weather conditions. As stated by P7, the school management arranged the playground outside for children in nice weather. Also, the school had a solution for cold weather: setting up the cinema hall for children to exercise. As similar to the experiences of P7, P4 also shared that the school provided options for children supporting physical activity by spending time in playgrounds and including different materials like ball pits. The other way of helping children for PA, P2, P3, and P5 shared that the teacher sent some tasks related to playing games together, doing exercises, and sending videos to the teacher.

The interviews figured out the impact of the closure of structured PA destinations. Participant 1 shared how her son suffered from this issue because he could not attend football courses because of restrictions during the COVID-19 pandemic. Moreover, he couldn't go to the swimming pool because of the closure. Participant 7 also experienced the same situation and stated that:

> *Before the pandemic, there were playgroups that lasted almost an hour. My child regularly used to attend these one-hour activity groups. However, we had to leave the groups because of the pandemic.*

In general, the physical activity level decreased during the COVID-19 pandemic, and children faced difficulties accessing outdoor facilities. Because of the home confinement, the time spent indoors increased, and families had to struggle with many problems. Based on the interviews, the families put a great effort into keeping their children active and protecting them from extra screen viewing. Also, the parents clearly expressed how much school support was necessary for terms of assisting their children to become physically active.

4.2.2. Sleep patterns during the COVID-19 pandemic

Almost half of the parents reported that their children's sleep quality was negatively affected by the COVID-19 pandemic. The most basic reason for the deterioration of children's sleep quality was that they couldn't spend their energy. Those who were not active enough during the day had difficulty falling asleep at night as mentioned by participant 1:

> *…my so had difficulties in getting to sleep, because he couldn't spend his energy. So, the child who was at home all day did not get tired.*

The impact of the COVID-19 pandemic on sleep quality was adversely experienced by children as seen from parents' views:

> *So, her sleep was seriously affected. When she slept late and woke up early, there were times when she was sleepy in the online course. We tried to change it a bit, but that's it. The pandemic process has seriously affected my child's sleep quality. (P3)*

Moreover, parents claimed that schools were closed due to the confinement during the pandemic, which negatively impacted the children's sleep patterns. While the children's sleeping hours were more regular during school time, their sleep hours were also delayed during the closing period. Thus, the benefit of school time in terms of sleeping hours was obviously stated by many parents during the interviews:

> *They (children) slept a little more because they were at home. For example, if she sleeps at half past nine or ten when schooltime, there has been some flexibility. She went to bed at half past eleven. (P6)*

The extent to which the COVID-19 pandemic disrupted children's sleep routines varied between participants. Generally, parents agree on their children's sleep duration to ensure that their children get enough sleep. In order to maintain the sleeping pattern and ensure that their children get enough sleep as much as possible, parents took some precautions to continue the same sleep patterns before the pandemic. A father explained the steps that he followed for her girl to improve her sleep quality and shorten the sleep latency:

> *We restrained the television hour in the evenings for her to sleep a little earlier. Then we tried to have her do some more physical activities because we thought that if she were a little more tired, she would go to bed earlier, and if she slept earlier, she would get up earlier. We did such things. We don't know how effective it was, though. (P3)*

Another participant shared her experiences of how she controlled her son's sleep duration during the COVID-19 pandemic:

> *Sleeping hours have always been under my control. He never went to bed when he wanted to. I could change the sleeping hours. For example, during the summertime, I directed my son to sleep almost an hour late because we go outside at night, but it was completely under my control. I heard from my other friends that their children sleep at twelve, they go to bed at one; such things did not happen with us. He was just a kid; I wouldn't let him stay until midnight. (P1)*

As a result of the decline in sleep quality and changes in sleep duration, children were faced with unfavorable results because they could not get enough sleep during the COVID-19 pandemic. The father of an 8-year-old girl shared his girl's unpleasant experience with the sleep quality:

> *Even if she got up for zoom in the morning, she continued to watch zoom from the bed, so she stayed in bed and fell asleep in front of the screen…. Because a camera was on, her friends saw her once, and she was negatively impressed by this situation. She worried about that issue for a few days because she thought her friends would make fun of her. That case didn't have a severe long-term effect, but at least she tried not to repeat it. (P3)*

While children experienced significant challenges regarding sleeping patterns and quality, some parents reported no change in their children's sleep patterns and quality.

> *There was no problem with the sleeping pattern. She went to bed, as usual, and got up as expected. The hours did not change. The order remained the same. The duration of sleep also did not change. (P1, P2, P4, P7)*

> *There was no change in sleep quality either. The same (pattern) continued in the pandemic. (P2, P4, P5, P7)*

Overall, the parents tried to ensure that their children got enough sleep even though their bedtime changed during the COVID-19 pandemic. Also, some children had to struggle with the negative consequences of sleep disruption, while some had no trouble with sleep quality.

4.2.3. Screen-based behaviors of children during the COVID-19 pandemic

A common understanding among parents was that their children's screen time increased dramatically during the COVID-19 pandemic. Most of the parents expressed how much they were concerned about their children's screen-based behaviors regarding screen time. Participant 1 expressed how she experienced the negative impact of the pandemic on screen time of her son:

> *In the first days, we were very confused; we did not know the time, we did not know how long we would be closed at home. Then there was the difficulty of the first days; the children were not allowed to go out. He didn't have a friend nearby to play with, even going out to the garden was forbidden at first. This inevitably affected screen time. I had to play games with him so he wouldn't look at the screen. This time I was very tired. For example, when I have to do work, I have to give a screen. That's why screen time has increased dramatically during the pandemic process. Those times were challenging.*

To understand to the severity of the situation, P7 clearly expressed how her child experienced the screen issues during the COVID-19 pandemic:

> *Maybe we could say it doubled (screen time). It was increased from one hour to two hours a day. Even it takes three hours a day due to the pandemic. Before the pandemic, it was an hour a day; in the pandemic, it doubled, tripled.*

This increase in screen time was not just about internet-related sources. It was highly possible to see that there was a serious increase in screen time even in the absence of the internet. Participant 4 shared their experiences about a serious increase in screen time despite the limited screen access:

> *We only have a TV as a screen in our house. We don't have an internet connection. There is only TRT Çocuk as a cartoon channel. Of course, the screen time increased, and the duration increased. Although we are limited in tv channels, the screen time definitely increased.*

Children lost the excellent opportunity to play with their peers in the schoolyard during the breaking times due to switching to distance education. Also, the time saved by the lack of commuting to school changed with other screen-related pursuits. The father of 8 years old girl (P3) claimed that:

> *She was watching cartoons between online courses; she couldn't do this while going to school. During the pandemic, the screen time of TV increased. Her teacher sent some educational content to follow from YouTube. Therefore, the time spent with the mobile phone also increased. So, I can say that the screen viewing time on both sides (TV and phone) almost doubled.*

Only one participant noted that there was no noticeable increase or decrease in her child's screen time even though she attended online courses through the TV screen (P8). The mother stated that her girl's screen time remained the same because of the child's health problem regarding the eye disease. The parent kept her child away from the screen due to an eye-related health condition.

With the harsh weather conditions, home confinement, and closed outdoor destinations, children tended to engage in more screen-based activities. Most parents listed their children's screen-based activities mostly during the pandemic in order of online/live lessons, cartoons, age-appropriate TV series, online games, makeup videos on YouTube, and TikTok/challenge videos. When screen device usage was examined through interviews, a common point was on the TV channel of TRT Çocuk, which is a national kid-vid. For families, this high trust in that channel was because of the age-appropriate content, as stated by participant 1:

> *As I said, I was comfortable when he watched TV because the channels go through a filter and get a confirmation from RTÜK, so there are no bad things in TV, I could leave the TV alone by checking the time of the TV, but I am not comfortable with that tablet, especially YouTube videos. There is an app called YouTube kids, but there are still some very stupid, nonsense, inappropriate contents purposefully produced for children.*

With the COVID-19 pandemic, the new normal was integrated into our lives, and one of the biggest changes occurred in the education system. During the confinement period, the distance education model was applied. Thus, the increase in screen time was not surprising when considering the distance education issue. In the interviews, parents reflected their observations on how their children screen-based behaviors changed noticeably, including screen usage purposes. Participant 3 shared their process about screen devices:

> *She has a mobile phone without a sim card. Got it in the pandemic. The need for a telephone arose after online education had been started. Later that device became a tool that she spent her free time after online courses.*

While the number of electronic devices used by children increased during the COVID-19 pandemic, the purpose of these devices changed also. For example, children use mobile phones and computers mostly for entertainment, such as watching videos and playing games, in addition to taking live lessons. Additionally, television was another screen source to reach educational resources such as TRT EBA provided by the Ministry of Education during the COVID-19 pandemic. Most of the parents specified the purpose of TV as a recreational screen activity because it was easy to watch cartoons on TV. As commonly shared by P1, P3, P4, P6, P7, and P8:

> *S/he mostly used TV to watch cartoons. Cartoons on TV consist of things that will not adversely affect the child's development, at least morally. YouTube is more dangerous than TV because you don't know what will come in front of you when watching videos from YouTube. I don't leave him/her with YouTube alone, but I am more comfortable with TV. There are annoying videos on YouTube prepared maliciously.*

As indicated in the interviews, inappropriate screen content was the primary concern of parents, which negatively influenced children's behaviors because that type of content manipulated children to behave in a way that was not appropriate for their age and encouraged them to live an unreal life. For example, the mother of an eight-year-old girl (P5) complained about how much her daughter tried to imitate the YouTubers

making makeup or challenge videos on TikTok. Another parent of an eight-year-old girl (P3) reported that his daughter's behaviors changed negatively from childish behaviors to more adult-like doings after she began to follow K- Pop groups. Unfortunately, as indicated by P1, some online games requested the photograph, video or location information, or even personally identifiable information from children. Demanding such personal information was a danger to the private life of families and posed a threat to the children's life security.

As understood from the interviews, all families experienced the negative consequences of that increased screen time and changing screen content resulting from the COVID-19 pandemic different from each other. One of the significant health outcomes of screen-related behaviors was the psychological well-being of children. Generally, parents reported that their children became more ill-tempered, bored, and obstinate, especially when children were deprived of the screen. After a while, children had trouble distinguishing the real life and the virtual world. Participant 1 narrated a brief anecdote about her son's experience with the virtual world:

> *"This is how my son was affected psychologically…he began to see the world electronically…creating universes, creating a world, current games like this. You create your own world in online games. He started to think like the virtual, and tried to identify the virtual world with the real world. Our school was out in the sticks; one day, while I was taking my son to school, there was fog, and only the top of the school was visible. My son turned to me and said, Mom, the school was not yet loaded; let's go back home."*

Similarly, most interviewees expressed general worries about what their children were exposed to in front of the screen; the following response was shared by P4:

> *After a while, my daughter began to emulate the things she watched and began to act like them. For example, she wanted to be a fairy even though it was not real. She played fairy games. She did magic or something like that in her games.*

While there was a consistency in the negative impact of the screen content on children's behaviors, some participants explained that their children were also positively influenced by the screen. For instance, because of an eye-related health issue, a parent (P8) had to keep away her daughter from the screen, and thus, her girl started a new hobby during the COVID-19 pandemic. Another participant (P7) explained that

her daughter was positively affected by cartoons featured on TRT Çocuk, such as co-operation, respect for elders, etc.

The interviewed parents all reported that they felt the need to control their children's screen time. When children were exposed to harmful content in front of the screen, families immediately took action to control the screen context and developed some solutions. The common solution many parents took was to limit screen time by setting the alarm, defining the screen limits, giving a verbal warning, and rewarding the children with the screen. While most of the parents explained that they succeeded in controlling the ST, only two of them pointed out the failure in the ST of their children. Although parents generally had a high awareness of the adverse outcomes of excessive screen usage and undesired screen context, they stated that after a while, screen addiction developed in children, and it was difficult to stop this addiction because of lack of activity diversity.

Overall, parents affirmed that their children's screen time increased resulting from pandemic-related changes in daily life routines (e.g., confinement, social distancing, shifting to online education, limited indoor/outdoor play facilities).

Most parents recounted how they adjusted their living conditions to the new normal and protected their children from the detrimental effects of the screen with great devotion. Moreover, although all of the parents accounted that they were miserable through the end of the COVID-19 pandemic, they were tired and insufficient for their children as playmates, so they had to break the rules by stretching the screen-related rules.

4.2.4. Behavioral and health consequences of the COVID-19 pandemic

The fourth theme, behavioral and health consequences of the COVID-19 pandemic, occurred as a result of the interviewee's responses. Parents delicately displayed their children's situations during the interviews and responded to the interview questions attentively and revealingly. A common point of discussion among parents was that they had a fear of infection, especially for their children. Because of the uncertainty of the COVID-19 pandemic, parents were anxious about the health of their children. Also, the mode of transmission of the coronavirus was a severe

problem for parents because they wanted to protect their children from getting infected. Some parents were more anxious about the fear of infection than others because of particular health issues. Participant 4 expressed the reason why she didn't let her child become socialize:

> *My girl did not benefit from the outdoor play facilities. Because of the disease (the COVID-19 pandemic). Because of the spread of the disease. Also, because of a premature baby in our house. We didn't let our child contact the outside (people). We even cut the contact completely.*

Participant 5 similarly reflected how the health condition of her child affected their social isolation:

> *I never let her go outside; we were always at home. She didn't take advantage of any of the outdoor recreational areas. Because we were so afraid of the disease. My daughter also had allergic asthma. I mean, we never went out because it (the coronavirus) could trigger a seizure. Due to the fear of the coronavirus.*

Parents' responses clearly described the severity of the situation about the lack of social interaction. Unfortunately, parents and children were not happy to be distanced from their friends. However, parents generally explained that they had to keep their children at home for their own sake. To some extent, parents found a temporal solution to meet their children's social needs by arranging online meetings. Even though children met with their friends through online platforms, they were still unhappy because the online meeting was not equal to face-to-face meetings. The father of an eight-year-old girl (P3) shared their experiences with the loss of social engagement:

> *She had little contact with her friends. When adults tried to play the games with her, she couldn't get the result she wanted, so she got bored and was alienated from the games. She always said she missed his friends. Since she did not enjoy playing with us (adults), she got bored of the games and turned to the screen more.*

In a similar experience, P5 expressed how she tried to create opportunities for peer socialization:

Within that period, I did not let her go out because we were terrified. She was upset about it. She could only meet with his friends via Zoom, but I don't know how effective it was.

The influence of pandemic-related rules affected the children's social life, and the new normal also changed how children communicated. By the time, the rules were stretched, and the way children socialized changed, as stated by participant 8:

Because we always warned children to become careful, they were afraid of the disease. When we were out, we consistently warned them. It negatively influenced children. They were negatively influenced psychologically. When children meet with their friends, they keep a social distance and wear the mask. When the pandemic rules were stretched, we gradually adapted to the situation children did. When they went to school, they almost turned to normal life.

As expressed by parents, having fewer opportunities to become socially active and a reduction in social engagement activities caused a problem which was difficulty in adapting to social life and getting contact with others. Participant 1 clarified that;

My son rejected to interact with people. Even he didn't need to meet with new people when the schools were open or when we were in the park. He forgot that he had a social life apart from his mother and online world.

Another point of view that caused a negative impact of the pandemic on the children's physical health. For protection, parents took hygienic measures when needed to get in contact with others. Spray and wet napkins were the two significant fixtures that parents always carried. Parents also claimed that their children did not want to play with the equipment in the playground because children didn't want to touch the any surface due to fear of infection.

The interview results highlighted that all families experienced the COVID-19 pandemic differently than each other. Thus, their obstacles were different than each other as expected. Parents generally claim a common point that their children get tired quickly when they attend any physical activity. Parents explained the reason for that tiredness as less walking opportunity from home to school during the COVID-19 pandemic.

For example, P1 and P8 commonly shared similar thoughts about their children:

> *During the pandemic, children could not become active enough. When they went outside, they immediately complained about getting tired. They became tired even while doing little things (low physical activity). For example, walking, running, or riding a bicycle. They got out of condition.*

Moreover, P1 and P6 stated that their children gained weight during the COVID-19 pandemic due to a sedentary lifestyle. In addition to physical tiredness, P1 claimed that her son struggled with eczema due to extra use of hygiene products.

Besides adverse physical health outcomes, children also had an emotional intensity during the COVID-19 pandemic. Parents experienced stress related to children being forced to stay at home and not getting in contact with peers. Children had to cope with the emotions of boredom, obstinacy, pettishness, and acting unlike the age.

Generally, families experienced different degrees of difficulties during the COVID-19 pandemic. While the COVID-19 pandemic passed more quickly for children who had the opportunity to spend time outdoors, children who stayed at home for a long time had more difficulties. Also, the children who had siblings had the opportunity to socialize in the house. Due to a lack of social interaction during the long confinement period, children had difficulties adapting to social life. Children were also negatively influenced by the pandemic-related restrictions. Moreover, children had to struggle with intense emotions because they were restricted and had to adapt to new normal.

CHAPTER 5

DISCUSSION

In this chapter, the study findings, including quantitative and qualitative results, were discussed to clarify the research question by examining sub-questions in detail. Based on the literature, the study findings were categorized as five main headings and discussed in this chapter respectively. At the end of this chapter, implications for families, school administrators, and future studies were provided in detail.

5.1.Physical Activity During the COVID-19 pandemic

This study examined the physical activity behaviors of children during the COVID-19 pandemic. In this study, the physical activity behaviors of children were described by using two dimensions; children's sports club knowledge and physical activities except for school/sports club for recreational purposes. As the first dimension of physical activity, the parents were asked about sports club participation for their children. The results showed that before the pandemic, most children attended gymnastics, football, basketball, and swimming clubs, respectively. Unsurprisingly, the number of children attending at least one sports club almost fell the half during the pandemic. The decrease might be due to the closure of sports clubs and related training facilities. Closure to sports clubs was considered a significant barrier to attending regular physical activity (Ng et al., 2020). With the closure of the sports club, children lost a great opportunity to become physically active. A qualitative study confirmed these results: with the pandemic outbreak, sports clubs were closed, and children did not like exercising at home, resulting in eating and sleeping for leisure (Razi & Nasiri, 2022).

Sports clubs should continue to conduct their sportive programs by caring safety rules to enhance life quality and increase resilience during global, affecting cases

(Constantini et al., 2021). Moreover, health club facilities should maintain physical activities during pandemic cases by taking precautionary measures, including lighting systems, safety, security, and cleaning management (Ibrahim & Hassanain, 2022).

This study's results showed that the number of training days changed during the COVID-19 pandemic. Before the pandemic, children mostly engaged in training for 1-2 or 3-4 days. However, these numbers drastically decrease during the pandemic. Because of lockdown, the sports clubs might limit their training days or close during the COVID-19 pandemic. Therefore, for future pandemics, sports clubs should search for alternative ways for their participants to maintain children's regular after-school programs (Petersen et al., 2021).

As a second dimension of physical activity, the parents were asked about physical activity behaviors and the frequency of these behaviors of their children. A consensus among parents was that children's physical activity levels decreased during the COVID-19 pandemic, as concluded by other substantial studies in the literature (Rajmil et al., 2021; Dallolio et al., 2022).

Since the pandemic was a situation that all families experienced for the first time, it was typical for families not to know what to do. As time passed, families who followed the measures taken by the state found solutions to their children's difficulties in their way. Dancing (Widyaningsih et al., 2021), doing family-based activities (Evans et al., 2020), and playing with animals (Moore et al., 2020) were the most shared ways of keeping children active during the home confinement period. In addition, an increase in family time was considered a positive outcome of the pandemic by many parents (Evans et al., 2020).

This study's results highlighted a decrease in the number of children attending physical activities for recreational purposes during the COVID-19 pandemic. Also, the frequency of these recreational activities decreased during the COVID-19 pandemic. These results were in line with the study from Germany, which concluded a decrease in leisure time sport and exercise (Mutz & Gerke, 2021). The reduction in physical activity level might be due to pandemic-related restrictions such as being forced to stay at home and losing structured sports activities.

The lack of sports/movement activities allowed families to create solutions to ensure the poor pandemic conditions less influenced children. Parents expressed that they

engaged in more child-based activities and offered different types of materials to their children (Lee et al., 2021). Because the socioeconomic level might be a barrier in front of reaching play materials and physical activity equipment, the policymakers might consider the families' income and take needed actions for material supplements during such pandemic cases. Also, families might be supported to choose age-appropriate toys for their children (Graber et al., 2021).

Most schools maintained the schedule through online/live classes in transition to online education. Parents were asked to define the physical education course content and the activities conducted by the teacher. Most of the parents described various activities which stimulate children's strong involvement in the online physical education courses. Moreover, some teachers sent a homework that required active parental engagement to meet children's physical needs and spend time with family. Because the effectiveness of the online physical education courses was not a major concern of this study, it was not known how much these courses were effective. Therefore, as conducted by Apriyanto and Adi (2021), the effectuality of the online physical education courses might be studied in future crises to gain maximum benefit from the classes and care lesson plans based on current evidence of this study. Policymakers (Ministry of Education, Ministry of Youth and Sports, etc.) should support teachers by meeting three basic needs (autonomy, competence, and relatedness) to satisfy teachers' involvement in educational innovations (Gorozidis & Papaioannou, 2014).

Overall, this study claimed that children's physical activity levels decreased during the COVID-19 pandemic. The most arguable reasons for that decrease might be home confinement and lack of structured physical activity facilities. Parents found different solutions for engaging in physical activity, including material supplements, spending more time with their children, and playing together. Also, the parent-teacher associations should arrange social meetings in order to offer opportunity both for families and parents to become socialized for future crises. Also, these meetings should be designed to do physical activity by supplying adequate material to enhance physical health during pandemics.

5.2.Changes in daily habits of children during the COVID-19 pandemic

In this study, children's daily routines were examined, including screen time, active play hours, and sleep patterns. The results indicated that the COVID-19 pandemic and related restrictions disrupted children's daily routines. Screen time, active play hours, and sleeping patterns were variables of daily routines that were examined through both surveys and interviews. Based on the study findings, a general increase in screen time was reported by parents. Although families expressed dissatisfaction with excessive screen viewing, it was inevitable that children were more exposed to screens during the COVID-19 pandemic compared to before the COVID-19 pandemic. These findings agreed with the related literature examining the effects of the COVID-19 pandemic on children's daily habits.

An outstanding study from the literature was conducted in China and focused on the impact of the COVID-19 pandemic on children's lifestyle behaviors (Xiang et al., 2020). The researchers found a substantial increase in children's screen time, even for leisure. A group of researchers from Italy conducted a longitudinal study to test the hypothesis that the lack of unstructured school activities and home confinement during the COVID-19 pandemic will cause unfortunate trends in children's lifestyles (Pietrobelli et al., 2020). They concluded that children's screen time during the COVID-19 pandemic increased by 4.85. These studies confirmed the current results indicating a noticeable increase in children's screen viewing during the COVID-19 pandemic. A reason for increased screen time might be pandemic-related restrictions. Schools switched to online education in which children were obligated to follow courses from online sources. Therefore, the screen time increased to follow the online courses.

The study also revealed that children mostly preferred using TV, telephone, tablet, and computer, respectively. As screen device preferences were considered, the reason for these preferences might be related to the lack of structured activities children could do during the home confinement period. As one of the ways of avoiding too much screen exposure, there might be age-appropriate and practical applications directing children to attend regular physical activity. Thus, such electronic devices (telephone, tablet, Pc, etc.) might be supplied as valuable tools for children.

Another research question investigated the active play hours of children. The results showed that children's need for the outdoor play was not enough to meet their developmental needs. While children's indoor active play hours increased during the COVID-19 pandemic, outdoor active play hours decreased drastically. These findings were aligned with the existing literature conducting to examine the physical activity changes of Canadian children (McCormack et al., 2020; Mitra et al., 2020). This decrease in outdoor play time might be explained by two possible reasons: lockdown and children's safety. Because of the COVID-19 pandemic, public spaces, playgrounds, and sports facilities were closed, and for a long time period, children were not allowed to spend time there. That closure of structured movement spaces might reduce the physical activity engagement of children. Also, families might feel the stress and extra burden on themselves to protect their children from getting infected. Therefore, the pandemic-related pressure might decrease outdoor time due to families' protective approaches (Johnson et al., 2021). To overcome the pandemic-related stress, parents should be supported by healthcare professions to avoid the long-term consequences of the COVID-19 pandemic. Also, parents should be educated regarding the strategies for managing parenting difficulties (Adams et al., 2021). Moreover, it should be noted that children might need extra support to handle pandemic-related changes and overcome pandemic-related stress factors. Therefore, public health interventions should also be arranged for children to help managing the significant changes in their lives.

Although the current study identified a serious decrease in outdoor playtime, there were slight increase in the number of children who played outside for 0-2 hours compared to before the pandemic. Similarly, a recent study aimed to explore children's experiences regarding physical activity and independent mobility (Guerrero et al., 2020). This study found that children were more active outside than inside during the COVID-19 pandemic. The light increase might be due to parents' high efforts to supply adequate outdoor opportunities for their children such as backyards. Also, parents were willing to meet their children's needs and support healthy movement behaviors as far as possible.

As the last variable of daily routines, sleeping hours were examined in detail, and concluded that there was no significant change in sleeping time during the COVID-19 pandemic based on survey results. Through interviews, sleeping patterns were deeply

analyzed, and parents mostly indicated no disruptions in children's sleep patterns. Although some children struggled with sleep issues, most of the children got enough sleep during the COVID-19 pandemic. These findings were aligned with the studies conducted by Pietrobelli et al. (2020) and Guerrero et al. (2020), which indicated that although there were unfavorable changes in children's sleep patterns, most of the children met the sleep guideline. In contrast to these findings related to sleep patterns, one of the recent studies demonstrated that children's sleep patterns were severely affected by home confinement (Bruni et al., 2022). This study displayed that the COVID-19 pandemic restrictions identified a significant delay in the sleep/wake schedule of children of all age groups and an increase in sleep disturbances. Another study concluded with similar results explaining substantial changes in sleep duration and the sleep-wake cycle of children during the COVID-19 pandemic (Zhao et al., 2022).

Obviously, children's routines deteriorated by the COVID-19 pandemic. To cope with pandemic-related problems, experts should care more attention to children's developmental needs and provide supportive strategies to cope with these struggles for future pandemic cases. Additionally, experts should cooperate with parents to manage children's daily routines, which helps them feel safe and secure and contribute to healthy movement behaviors and less problematic behaviors (Spinelli et al., 2020).

5.3. Outdoor Physical Activity During the COVID-19 pandemic

The study investigated how much children attend outdoor physical activities and how often they benefit from outdoor physical activity facilities. The results indicated a net decline in outdoor time during the COVID-19 pandemic. Most parents reported that their children less benefited from outdoor physical activity facilities such as playgrounds and public spaces. Moreover, the study revealed point that the frequency of outdoor physical activity use decreased during the COVID-19 pandemic. The current study results were supported by substantial research from Canada, which concluded that the closure of outdoor recreational facilities was linked to decreased engagement in outdoor physical activities (Mitra et al., 2020). One of the possible arguments for that decrease might be due to the pandemic-related restrictions, including stay-at-home forces and parents' protective approach toward their children. Although

the majority of the parents identified lots of not preventable excuses for the decrease in outdoor time, some parents claimed that they didn't experience a challenge in reaching outdoor play facilities. Easy access to outdoor play facilities was directly related to having outdoor space in a residential area such as backyards. Almost half of the parents identified an outdoor space where their children spent time and engaged in outdoor recreational activities. Parents claimed that they didn't experience the severe impacts of the COVID-19 pandemic concerning having at least one outdoor physical activity opportunity. These findings were in line with the results of a recent study conducted by Hazlehurst et al. (2022) to investigate the relationship between park access and children's mental health. Besides physical activity benefits, these results also figured out that park access was linked with better emotional well-being and lower mental health issues.

The study results indicated that the most decrease in the use of outdoor physical activity equipment was observed in slides, swings, seesaws, and swimming pools. On the contrary, the slightest decrease was observed on the football field and volleyball court. One possible reason for the change of decrease level might be that children escaped engaging in activities that needed touching on surfaces directly. Instead, children might prefer to participate in outdoor physical activities that need minimum physical interaction with others.

To deeply examine the outdoor physical activity participation of children, how much children participated in these facilities were asked parents to get their frequency knowledge. When the frequencies of outdoor physical activity equipment were examined through study results, parents highly indicated that children participated less in moderate and high-intensity level outdoor physical activities during the COVID-19 pandemic. In contrast to that decrease, there was a slight increase in the number of children who participated in the low-intensity level of outdoor physical activity during the COVID-19 pandemic compared to the pre-pandemic. This difference might be caused by the parents' high awareness of the importance of physical activity, especially children's needs to release extra energy during the COVID-19 pandemic. Another reason might be that latter in the COVID-19 pandemic, the pandemic-related rules were stretched, and children were more able to spend time outdoors, especially they could go to parks, playgrounds, and public spaces more than before the pandemic.

The literature about children's outdoor play/movement opportunities provided similar studies investigating how children's outdoor play was affected by the COVID-19 pandemic. Both studies revealed that pandemic-related restrictions negatively impacted the movement behaviors of children (Perez et al., 2021) and caused a decline in outdoor sports activities of children during the COVID-19 pandemic (Schmidt et al. 2020).

As one of the major outcomes of this study results, children had access issues in reaching outdoor play/movement facilities, which resulted in an increase in sedentary behaviors. To meet children's need for structured outdoor sport/play/movement facilities, future studies could search for possible ways to increase the accessibility of outdoor play/movement time that children could attend with less risk of getting infected.

This study offered a vision that accesses to even small outdoor space positively affected children's movement behaviors, as also found in the study of Moore et al. (2020). Also, the study highlighted an important point that suggests more outdoor opportunities were associated with fewer mental health issues (Grima et al., 2020). Therefore, for future lockdowns, this study indicated that policymakers and city planners to build residential areas by considering the green and open spaces that enable people to move freely and reach physical activity facilities to maintain both physical and mental health (Geng et al., 2021).

This study revealed that having an outdoor space near the home directly affected activities. According to parents' reports, the most common activities were walking, playing in the garden, and cycling in the neighborhood. In the absence of outdoor space, children had to spend time at home more than other children.

This study also examined the daily movement activities of children through parents' interviews. Most parents claimed that they let their children attend limited outdoor physical activities such as walking or biking around the neighborhood. The reason for this preference might be due to parents' concerns regarding the transmission of the disease. Parents also highlighted that they limited their children's social life to reduce their direct interaction with others to avoid close relationships. However, some parents also claimed that their children mostly insisted on hanging out with their friends.

Parents clearly stated the social impact of the COVID-19 pandemic. The lack of social interaction caused some issues in children, such as avoiding contact with others or meeting new people. In the long term, this withdrawal from social life might result in severe social adaptation problems in adulthood. Although parents claimed that children arranged online meetings with their friends, these meetings were not able to replace face-to-face meetings. These findings concurred with a similar study reporting negative changes in social stimulation, such as reduced frequency of visiting friends and relatives during the COVID-19 pandemic (Li et al., 2021). In future lockdowns, to meet children's social needs, parents might organize face-to-face meetings for children to become socialized by caring about social distance rules. Also, schools might provide social activities that enable children to participate safely. Although the social impact of the COVID-19 pandemic on children's social skills was not the main variable of this study, the results figured out a decline in loss of social mobility for children. Therefore, future studies could examine how the COVID-19 pandemic impacted children's social life in detail.

5.4. Indoor Physical Activity During the COVID-19 pandemic

This study examined the indoor physical activity opportunities of children and how children's indoor physical activities were affected by the COVID-19 pandemic. The results figured out the impact of the COVID-19 pandemic on time spent indoors. Parents identified a net increase in time spent indoors. This increase might be due to pandemic-related restrictions. During the lockdown period, children were prohibited from spending time in public spaces such as playgrounds or parks. The closure of structured outdoor opportunities minimized the children's independent mobility (Riazi et al., 2021) and caused an increase in time spent at home. The study also highlighted that children's physical activity behaviors changed during the pandemic. These changes were related to the circumstances of that period, which forced stay at home.

The lockdown period directly increased the indoor time and resulted in a decrease in the physical activity level of children. This decrease might negatively change children's lifestyles and increase sedentary behaviors among children (Runacres et al., 2021). Also, the results proved that the COVID-19 pandemic impacted children's play

behaviors because the lockdown period kept children indoors, and it became a barrier in front of children's social settings that enabled children to meet with their peers, such as schools or parks. The pandemic-related restrictions were significant determinants of the decrease in children's play behaviors, as also stated by the study of Bulgarelli et al. (2022).

Due to the lockdown, the time children spent at home increased, which caused an over-dependent on caregivers (mostly mothers) and a lack of in-person activities (Singh et al., 2020). However, the absence of social relationships and staying at home for an extended period might have long-term impacts on children's mental, emotional and physical development, as indicated in the literature of Araújo et al. (2021). To minimize the negative effect of the COVID-19 pandemic on children's development, educators might take responsibility for training parents about play opportunities and integrating physical activity into daily routines to prevent showing more sedentary lifestyles. Because it is easily available and inexpensive, music might be seen as a way to keep children active during home confinement (U'wais et al., 2021).

Despite the negative influence of the pandemic on indoor time, some parents claimed that they did not experience the impact of the COVID-19 pandemic severely. They expressed their environmental settings, which include at least one outdoor play facility such as a garden or backyard. These results confirmed that all children were not equally affected by the COVID-19 pandemic, and living in a detached house was positively associated with healthy movement behaviors (Moore et al., 2020).

The COVID-19 pandemic also affected the frequency of physical activity of children. Before the pandemic, while children engaged primarily in low activity levels, they participated in more low and moderate activity levels during the pandemic. Although the importance of physical activity for children is well known (Neely & Holt, 2014; Ericsson & Karlsson, 2011; Parfitt & Eston, 2005), recent studies proved the reduced amount of physical activity among children (Eyler et al., 2021; Riazi et al., 2021). Parents might direct their children to take responsibility for a pet or gain new hobbies like dancing that stimulate healthy movement behaviors (Moore et al., 2020). In addition to parental support, the governments should publish public messages promoting healthy movement behaviors in which media could be promotive to break up extended sitting periods (Guan et al., 2020).

Overall, during lockdown periods, children could be negatively influenced by different development areas. To prevent long term impacts of staying too much locked at home, parents might be supported by authorities to create play opportunities and space to reach recommended physical activity levels. Also, children might be supported to attend the regular physical activity in various settings such as parks, schools, etc. (Moore et al., 2021).

5.5. Health and Behavior Outcomes of the COVID-19 pandemic

This study investigated the physical activity behaviors of children during the COVID-19 pandemic. As the last heading, health and behavioral outcomes emerged that children experienced during the pandemic. This study revealed that fear of infection manipulated the parents' decisions about their children's lifestyles. This was because most of the parents were anxious about their children's health. Also, the mode of transmission might affect how families react to the spread of the disease and control the preventive measures (Doshi et al., 2021). For example, parents mostly expressed how they set hygiene rules when they were outside with their children and how these rules affected children's behaviors in playgrounds or public spaces, such as hesitating to touch the surface of the play equipment. Because the interviews mostly included mothers, that ratio might impact the results that claimed a high degree of fear of infection among mothers (Lim et al., 2018). Therefore, future studies might study fathers to examine their perspectives on the impact of the COVID-19 pandemic on children's physical activity behaviors and daily habits, including sleep patterns and screen time.

The impact of the COVID-19 pandemic on the social life of children was examined in this study. The results stated that due to pandemic-related restrictions, children were unhappy with their social relationships. Although children had a chance to meet with their friends via online meetings, they were not satisfied as these online meetings were not placed with face-to-face meetings. As a result of social isolation, children experience hard feelings to struggle with, such as boredom. To clearly understand the impact of reduced social and physical contact with others on children's psychological health during the COVID-19 pandemic, Brooks et al. (2020) conducted a review study that confirmed this study's results. Based on the review results, most

studies revelated that after long quarantine periods, negative physiological outcomes could emerge, and officials should consider quarantine duration to provide sufficient supply to children.

This study described weight gain as a negative health consequence of the COVID-19 pandemic. Previous studies proved that school-aged children tend to gain more weight during school closures (Moreno et al., 2013; von Hippel & Workman, 2016). One possible solid for the weight gain might be due to an increase in sedentary behaviors of children and less attendance to physical activity during the pandemic (Browne et al., 2021). Although this study did not examine children's food intake, there might be a relationship between excessive weight gain and food intake during the lock-down. Therefore, future studies might study the association between dietary behaviors of children, weight gain, and physical activity level. Also, parents should present role model behaviors for their children, including healthy dietary habits and engaging active lifestyle, as also claimed by (Østbye et al., 2013). Health professions should emphasize the risk of obesity in children and supply prevention strategies cooperating with parents (Stavridou et al., 2021).

Emotional struggles were another outcome of this study that children had to face during the COVID-19 pandemic. As claimed by parents, children experience emotional intensity. From the interviews, it was observed that parents mostly had a responsibility to regulate children's emotions. As suggested by Wijaya et al. (2022), parents might help children to regulate their strong feelings by engaging in family entertainment activities such as playing social games, gardening, and storytelling.

Overall, this study presented evidence on the impact of the COVID-19 pandemic on children's social, emotional, and physical health. To overcome these obstacles, parents might need to get help from experts searching for beneficial ways during quarantine periods.

5.6. Implications

This study provides substantial implications for policymakers (education and health professions), school administrators, teachers (physical education and classroom teachers), and parents.

5.6.1. Implications for Policy Makers and School Administrators

1. Policymakers should provide landscaped spaces for children and families to participate in outdoor physical activities to maintain bodily health during confinement periods. These outdoor facilities should be arranged considering weather conditions and accessible throughout the year, even during lockdown periods.
2. Policymakers have the responsibility of the population regarding the prevention of the spread of the diseases while also responsible for supporting healthy lifestyles. Therefore, policymakers should charge authorities to publish public service ads informing the population about ways of avoiding the disease and staying active.
3. For future waves, this study is an evidence-based resource that might help policymakers to be aware of the importance of physical activity. Based on this study's results, policymakers should arrange policies that support healthy lifestyles at all levels of society. Also, policymakers should search for the families' socioeconomic status to offer financial support for obtaining needed materials.
4. Screen devices could be used as beneficial tools for children to reach healthy movement applications. Therefore, policymakers should cooperate with other media organs to use technological devices for social purposes. For example, Useful TV programs can be arranged to meet the daily movement needs of children.
5. As one of the major concerns of parents in this study, internet resources should be controlled by authorities and change the screen context in a favorable way, such as media blackouts for children or forbidding inappropriate cartoons for children. In addition, online games for children should be examined to protect children.
6. School administrators should conduct educational programs to inform parents about dealing ways of pandemic-related issues.

7. School administrators should care about the changing conditions and be aware of how to adapt to these new changes. Therefore, as much as the school transition process, children's adaptation process should be cared for by school management.

5.6.2. Implications for Teachers (Physical Education & Classroom Teachers) and Parents

1. Teachers should prepare lesson plans to support children in reaching recommended physical activity levels. Moreover, for distance education, teachers should take more responsibility for offering children different movement activities to enable them to become physically active.
2. As noted by some parents during the interviews, the uncertainty of the situation was a significant concern for parents because they didn't know how to manage the new changes. Also, children's daily routines were upside down during the pandemic. This study suggests that teachers should inform parents about managing children's daily routines, including sleep patterns.
3. Teachers should care more about the importance of physical activity and supply additional sources for parents to engage in these activities with children. Cooperation and engagement of families in the process might help children to reduce mental health issues and increase physical health.
4. Teachers should consider children's developmental needs and prepare a curriculum to meet children's needs. For example, when the pandemic is over, teachers should evaluate children's current developmental level and arrange lesson plans to close the gap.
5. Parents should spend more time with their children and make close relationships to increase interaction between their children. Also, parents' perceptions about physical activities could positively affect children's engagement in sports activities. Therefore, parents should highly attach importance to giving place physical activity in children's daily routines.
6. Parents should search for reliable internet sources that facilitate active engagement in sports for their children. For this reason, families have

7. Parents should provide the necessary conditions for home-based activities. For that, there is no need for expensive equipment. Spending quality time with children is more valuable than buying them expensive toys. Therefore, parents should search for activities that children could safely engage in and learn while doing.

5.7. Recommendations for Future Research

Future studies should;

1. Conduct interviews with children to analyze children's physical activity experiences during pandemic periods. In addition, other caregivers such as grandfathers or grandmothers might share their observations about children's daily routines and physical activity behaviors.
2. Examine the effects of socioeconomic status and educational background of families on children's physical activity behaviors, sleeping patterns, and health status during COVID-19 pandemic.
3. Investigate the gender and age differences in children's physical activity levels during COVID-19 pandemic.
4. Focus on children with special needs could be studied to identify their needs and prepare developmentally appropriate physical activity plans and guidelines during COVID-19 period.
5. Examine the long-term impacts of the COVID-19 pandemic on children's health status and physical activity behaviors.
6. Develop indoor and outdoor physical activity guidelines for children concerning.
7. Examine the effects of COVID-19 pandemic on the motor development of children.
8. Include objective measurement tools such as accelerometer or pedometer to measure children's physical activity levels.
9. Examine the differences between mothers' and fathers' perceptions about children's sleeping patterns, screen time, and physical activity levels during COVID-19 pandemic.

10. Make physical activity interventions for children for confinement periods and measure the effectiveness of these inventions.

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APPENDICES

A. PHYSICAL ACTIVITY SURVEY

ÇOCUKLAR İÇİN FİZİKSEL AKTİVİTE ANKETİ

Bu anket Orta Doğu Teknik Üniversitesi (ODTÜ) Beden Eğitimi ve Spor Bölümü yüksek lisans öğrencisi Leyla ALKAN tarafından 5-12 yaş arasındaki çocukların pandemi öncesi ve sonrası fiziksel aktivite davranışlarını değerlendirmek için hazırlanmıştır. Çalışma üç aşamadan oluşmaktadır; ilk aşamada demografik bilgiler, ikinci aşamada fiziksel aktivite imkanları ve üçüncü aşamada ise fiziksel aktivite davranışları sorulmaktadır. Anketi doldurmak yaklaşık 10 dakika sürmektedir. Sizlerden edinilecek bilgiler tamamen bilimsel amaçlı kullanılacak olup kişisel bilgiler gizli tutulacaktır. Katkılarınız bizim için önemlidir. Şimdiden değerli katkılarınızdan dolayı teşekkür ederiz

Doç. Dr. Irmak HÜRMERİÇ ALTUNSÖZ
Orta Doğu Teknik Üniversitesi (ODTÜ)
Beden Eğitimi ve Spor Bölümü (Tez Danışmanı)

Araştırma Görevlisi Leyla ALKAN
Orta Doğu Teknik Üniversitesi (ODTÜ)
Beden Eğitimi ve Spor Bölümü

Bu anket çocuğunuzun pandemi öncesi ve sonrası süreçte fiziksel aktivite davranışlarındaki ve seviyesindeki değişimleri ölçmek için hazırlanmıştır. 5-12 yaş arasında birden fazla çocuğunuz var ise bir tanesine göre cevaplamanız yeterli olacaktır.

Anketin bu kısmında aileniz ile ilgili genel bilgiler sorulacaktır. Anne veya babadan birinin doldurması gerekmektedir.

Anketi dolduran kişi: Anne ☐ Baba ☐

Çalışmaya hangi şehirden katılıyorsunuz? Ankara ☐ İstanbul ☐ Diğer ☐

Eğitim durumunuz:	Anne	Baba
	İlkokul	İlkokul
	Ortaokul	Ortaokul
	Lise	Lise
	Üniversite	Üniversite

Yüksek Lisans	Yüksek Lisans
Doktora	Doktora
Diğer	Diğer

Ailedeki toplam çocuk sayısı? 1☐ 2 ☐ 3☐ 4 ☐ Diğer☐

Ailenin aylık toplam geliri ? (ek gelirler dahil)

0-2300 ☐ 2300-3500 ☐
3500-5000 ☐ 5000-7500 ☐ 7500+ ☐

Şu anki iş durumunuz nedir?

Anne		Baba	
Çalışıyor	☐	Çalışıyor	☐
Çalışmıyor	☐	Çalışmıyor	☐
Online Çalışıyor	☐	Online Çalışıyor	☐

Lütfen yaşadığınız bölgeye en uygun seçeneği işaretleyin.

Büyükşehir	☐	Şehir	☐
Kasaba	☐	İlçe	☐
Mahalle	☐	Köy	☐

Lütfen yaşadığınız ev tipini işaretleyin. Apartman ☐ Müstakil ☐

Düzenli olarak fiziksel aktivite yapıyor musunuz? Evet ☐ Hayır ☐

Ne tür fiziksel aktivite yapıyorsunuz?_____

Haftada ortalama ne kadar süre yapıyorsunuz?_____gün,_____saat
(Örnek: 3 gün, 2 saat (günde 2 saat demek)

Türkiye Fiziksel Aktivite Rehberi hakkında bilginiz var mı? Evet ☐ Hayır ☐

Anketin bu kısmında çocuğunuz ile ilgili genel bilgiler sorulmuştur. Lütfen uygun yaş aralığında birden fazla çocuğunuz var ise tüm soruları bir çocuğunuz için yanıtlayınız.

Çocuğunuzun cinsiyeti: Kız ☐ Erkek ☐

Çocuğunuzun doğum yılı: _____

Çocuğunuzun boy ve kilosu:_____cm, ____kg

Çocuğunuzun kronik bir rahatsızlığı var mı? (diyabet, astım vb.) Evet ☐ Hayır ☐

Evet ise, hangileri var? Diyabet ☐ Astım ☐ Anemi ☐
Yiyecek alerjisi ☐ Obezite ☐ Diğer ☐ Cevap vemek istemiyorum ☐

Çocuğunuz koronovirüs hastalığına yakalandı mı? Evet ☐ Hayır ☐
Cevap vermek istemiyorum. ☐

Çocuğunuzun devam ettiği okul türü:

Pandemi öncesi		**Pandemi Sonrası**	
Özel	☐	Özel	☐
Devlet	☐	Devlet	☐
Diğer	☐	Diğer	☐
Okula gitmiyor/başlamadı	☐	Okula gitmiyor/başlamadı	☐

Çocuğunuz kaçıncı sınıfa gidiyor? Anaokulu ☐ 1 ☐ 2 ☐ 3 ☐
4 ☐ 5 ☐ 6 ☐

Çocuğunuz online ders yapıyor mu? Evet ☐ Hayır ☐

Evet ise haftada toplamda kaç saat yapıyor?_____

Çocuğunuz okula gidiyor mu? Evet ☐ Hayır ☐

Evet ise haftada toplamda kaç saat okula gidiyor?_____

Çocuğunuzun online beden eğitimi ve spor dersleri oluyor mu? Evet ☐ Hayır ☐

Evet ise ne tür fiziksel aktiviteler yapılıyor? (futbol, bale, jimnastk vb)_____
Evet ise bir haftada toplam kaç saat oluyor? _____

Çocuğunuz herhangi bir spor klubüne gidiyor mu? (futbol,voleybol,jimnastik, dans, tenis vb) Evet ☐ Hayır ☐

Ne kadar süredir gidiyor? 0-3 ay ☐ 3-6 ay ☐
6-12 ay 1 yıl ☐ 2 yıl+ ☐

Eğitimini ne şekilde alıyor? Yüz yüze ☐ Online ☐ Karma ☐

Evet ise, çocuğunuz bu kulube haftada toplam kaç gün ve kaç saat gittiğini lüten tabloda belirtiniz. (Online olarak yapanlar da dahil.)

Spor branşının adı	**Pandemi Öncesi (13 Mart ve öncesi)**		**Pandemi Sonrası (13 Mart ve sonrası)**	
	Haftada kaç gün	Günde kaç saat	Haftada kaç gün	Günde kaç saat
Badminton				
Basketbol				
Dans				
Futbol				
Jimnastik				
Karate				
Taekwondo				
Tenis				
Voleybol				
Yüzme				
Diğer (Belirtiniz)				

Anketin bu kısmında çocuğunuzun ekran başında geçirdiği süre ve uyku ile ilgili sorular sorulacaktır. Soruları cevaplarken haftaiçi-haftasonu kaç gün ve bir günde ortalama ne kadar yaptığınını düşünerek cevaplayınız. (*Örneğin 'Çocuğunuz gün içinde ortalama kaç saat tv izliyor? Sorusuna cevap olarak eğer çocuğunuz haftaiçi toplam 5 gün, gün içinde ortalama 1 saat izliyorsa 5gün, 1 saat olarak cevaplayabilirsiniz.)* ***Anket için uygun yaş aralığında olan birden fazla çocuğunuz varsa biri için cevaplayınız.)***

Sorular	**Pandemi Öncesi (13 Mart Öncesi)**				**Pandemi Sonrası (13 Mart Sonrası)**			
	Haftaiçi		Haftasonu		Haftaiçi		Haftasonu	
Çocuğunuz gün içinde ortalama kaç saat tv izliyor?	Haftada kaç gün	Günde kaç saat	Haftada kaç gün	Günde kaç saat	Haftada kaç gün	Günde kaç saat	Haftada kaç gün	Günde kaç saat
Çocuğunuz gün içinde kaç saat bilgisayar, playstationvs oyunları oynuyor?								
Çocğunuz gün içinde kaç saat telefon veya tablet ile vakit geçiriyor?								
Çocuğunuz evde gün içinde ne kadar süre oyun oynuyor?								
Çocuğunuz ev dışında günde ortalama kaç saat oyun oynuyor?								
Çocuğunuz günde ortalama kaç saat uyuyor?								

Anketin bu kısmında çevrenizde bulunan her türlü fiziksel aktivite olanakları sorulmaktadır. Çocuğunuzun aşağıda belirtilen fiziksel aktivite imkanlarını bir hafta içinde kaç gün ve gün içinde kaç saat kullandığını belirtiniz.

		Pandemi öncesi (13 Mart ve öncesi)				**Pandemi sonrası (13 Mart ve sonrası)**			
		Haftaiçi		Haftasonu		Haftaiçi		Haftasonu	
		Haftada kaç gün	Günde kaç saat	Haftada kaç gün	Günde kaç saat	Haftada kaç gün	Günde kaç saat	Haftada kaç gün	Günde kaç saat
Ev Dışı Fiziksel Aktivite İmkanları	Basketbol sahası								
	Bisiklet parkuru								
	Fitness aletleri								
	Futbol sahası								
	Kaydırak								
	Kum havuzu								
	Salıncak								
	Tahterevalli								
	Tenis kortu								
	Trambolin								
	Voleybol sahası								
	Yürüyüş alanı								
	Yüzme havuzu								
	Diğer (Belirtiniz)								

Anketin bu kısmında evinizde bulunan her türlü fiziksel aktivite olanakları sorulmaktadır. Evinizde var ise evet kısmını, yok ise hayır kısmını işaretleyiniz. Çocuğunuzun bunları kullanma sıklığını 1'den 5'e kadar numaralandırınız. (1 en az, 5 en çok)

Aşağıda bulunan fiziksel aktivite çeşitlerinden sahip oldukları-nızı lütfen işaretleyiniz.	**Pandemi öncesi (13 Mart ve öncesi)**			**Pandemi sonrası (13 Mart ve sonrası)**				**Pandemi öncesi (13 Mart ve öncesi)**			**Pandemi sonrası (13 Mart ve sonrası)**		
	Evet	Hayır	Kullanım sıklığı	Evet	Hayır	Kullanım sıklığı		Evet	Hayır	Kullanım sıklığı	Evet	Hayır	Kullanım sıklığı
Kaydırak							Top havuzu						
Denge tahtası/denge oyunları							Atlama ipi						
Bovling seti							Hula-hop						
Basketbol potası							Dart tahtası						
Zıplama Çuvalı							Kale						
Twister							Tram-bolin						
Jimnastik minderi							Tır-manma duvarı						
Top							Raket						
Satranç							Kutu oyun-ları						

Golf							Diğer (belir-tiniz)						

Lütfen çocuğunuzun okul/spor klübü dışında eğlence amaçlı yaptığı fiziksel aktivite çeşitlerini haftada kaç gün ve günde kaç saat saat yaptığını belirtiniz.

Fiziksel aktiviteler	**Pandemi öncesi (13 Mart ve öncesi)**				**Pandemi sonrası (13 Mart ve sonrası)**			
	Haftaiçi		Haftasonu		Haftaiçi		Haftasonu	
	Haftada kaç gün	Günde kaç saat	Haftada kaç gün	Günde kaç saat	Haftada kaç gün	Günde kaç saat	Haftada kaç gün	Günde kaç saat
Bale								
Basketbol								
Bisiklet sürmek								
Boks								
Bovling oynamak								
Dans								
Futbol								
Güreş								
Halk oyunları								
İp atlamak								
Judo								
Karate								
Kaykay sürmek								
Koşu/Kros								
Oyun parkında oynamak								
Paten/tekerlekli paten kaymak								
Scooter kullanmak								

Taekwondo								
Tenis								
Tırmanma								
Trambolinde zıplamak								
Voleybol								
Yürüyüş yapmak								
Yüzmek								
Diğer (lütfen belirtiniz)								

B. INTERVIEW QUESTIONS

FİZİKSEL AKTİVİTE GÖRÜŞME SORULARI

Bu görüşme ORTA DOĞU TEKNİK ÜNİVERSİTESİ, Beden Eğitimi ve Spor bölümü yüksek lisans öğrencisi Leyla ALKAN tarafından, Doç. Dr. Irmak HÜRMERİÇ ALTUNSÖZ danışmanlığında yürütülen yüksek lisans tezi kapsamında yapılmaktadır. Görüşmenin amacı pandemi döneminde çocukların fiziksel aktivite düzeylerindeki değişimi incelemektir. Görüşmede herhangi bir kişisel bilgi sorulmayacak olup, sizden alınan bilgiler sadece bilimsel amaçlı kullanılacaktır. Görüşme sırasında rahatsızlık hissederseniz istediğiniz an görüşmeden ayrılabilirsiniz. Lütfen soruları pandemi dönemini düşünerek cevaplayınız. Katılımınız için teşekkür ederiz.

Sorular

1. Pandemi sürecinde çocuğunuzun ekran (TV, tablet, telefon vs.) alışkanlıklarında nasıl bir değişim oldu? Bu değişimi; süre bakımından nasıl değerlendirirsiniz?

- Genelde ne tür içerikler izledi? İçerikte ne gibi değişimler oldu?
- Çocuğunuzun ekran başında geçirdiği süreyi kontrol etme ihtiyacı hissettiniz mi?
- Evet ise, ne derece kontrol edebildiniz?
- Çocuğunuz daha çok hangi elektronik cihazları kullandı (TV, PC, Tablet vs.)?
- Bu cihazları daha çok hangi amaçla kullandı?
- Sizce ekran alışkanlıklarının değişmesi çocuğunuzu nasıl etkiledi, ekran alışkanlıklarının değişmesi çocuğunuzun davranışlarında bir değişikliğe yol açtı mı?
- Bu süreçte, ekran (süre, içerik vb.) ile ilgili ne gibi zorluklar yaşadınız? Buna ne gibi çözümler buldunuz? (Çözüm önerileriniz nelerdir?)

2. Pandemi sürecinde çocuğunuzun uyku düzeninde ne gibi değişimler gözlemlediniz?

- Bu değişimi; süre bakımından nasıl değerlendirirsiniz?

- Uyku kalitesinde değişiklikler gözlemlediniz mi?
- Uyku saatlerinin değişimi çocuğunuzu ruhsal-psikolojik olarak nasıl etkiledi?

3. Pandemi sürecinde çocuğunuzun fiziksel aktivite alışkanlıklarını genel olarak nasıl yorumlarsınız?
4. Pandemi sürecinde çocuğunuz yaşadığınız çevredeki fiziksel aktivite imkanlarından ne kadar yararlanabildi (oyun parkları, belediye spor salonları, jimnastik aletleri vs.)?

- Pandemi sürecinde ev dışında geçirdiği sürede nasıl bir değişim oldu?
- Bu değişim çocuğunuzu nasıl etkiledi?

5. Çocuğunuzu dışarda fiziksel aktivite/spor/egzersiz yapmak için nasıl desteklediniz? (Desteklemek için neler yaptınız?) Bu süreçte, ne tür zorluklar yaşadınız? Hangi çözümleri buldunuz?
6. Pandemi sürecinde, çocuğunuzun ev içindeki vakti genel olarak nasıl geçti?

- Evde ne tür fiziksel aktivite, spor, egzersiz vs. yaptı?
- Neler yapmak istedi? Neler yapamadı?
- Çocuğunuzun hareket alanı çok kısıtlandı mı? Hareket alanını genişletmek için nasıl çözümler buldunuz?
- Çocuğunuzu ev içinde fiziksel aktivite/spor yapması için desteklediniz mi? Desteklemek için neler yaptınız? Yeni materyaller, oyuncaklar vs. aldınız mı? (Evet ise, neler aldınız?) Bu süreçte, ne tür zorluklar yaşadınız? Ne gibi çözümler buldunuz?

7. Pandemi sürecinde çocuğunuzun fiziksel aktivite/hareket/mobilete seviyesini desteklemek için okul tarafından neler yapıldı?

- Online ya da yüz yüze derslerde fiziksel aktiviteye, harekete, oyuna vs. yer verildi mi? Bu derslerde genel olarak neler yapıldı?

8. Son olarak eklemek istediğiniz bir şey var mı? Çalışmaya katkılarınız için teşekkür ederim.

C. APPROVAL OF THE METU HUMAN SUBJECTS ETHICS COMMITTEE

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER

ORTA DOĞU TEKNİK ÜNİVERSİTESİ
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17 ŞUBAT 2021

Konu : Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)

İlgi : İnsan Araştırmaları Etik Kurulu Başvurusu

Sayın Irmak Hürmeriç ALTUNSÖZ

Danışmanlığını yaptığınız Leyla ALKAN'ın "Covid-19 Sürecinde 5-12 Yaş Çocukların Fiziksel Aktivite Davranışlarındaki ve Seviyelerindeki Değişikliğin İncelenmesi" başlıklı araştırması İnsan Araştırmaları Etik Kurulu tarafından uygun görülmüş ve **046-ODTU-2021** protokol numarası ile onaylanmıştır.

Saygılarımızla bilgilerinize sunarız.

Prof. Dr. Mine MISIRLISOY
İAEK Başkanı

D. INFORMED CONSENT FORM

ARAŞTIRMAYA GÖNÜLLÜ KATILIM FORMU

Bu araştırma, ODTÜ öğretim elemanlarından Doç. Dr. Irmak HÜRMERİÇ ALTUNSÖZ danışmanlığında yüksek lisans öğrencisi Leyla Alkan tarafından yürütülmektedir. Bu form sizi araştırma koşulları hakkında bilgilendirmek için hazırlanmıştır.

Çalışmanın Amacı Nedir?
Araştırmanın amacı, pandemi sürecinde çocukların fiziksel aktivite alışkanlıkları ve seviyelerindeki değişimi değerlendirmektir.

Bize Nasıl Yardımcı Olmanızı İsteyeceğiz?
Araştırmaya katılmayı kabul ederseniz, sizden yaklaşık 8-10 dakika süren bir anket doldurmanızı isteyeceğiz. Ankette size demografik bilgiler, fiziksel aktivite imkanları ve fiziksel aktivite alışkanlıkları ile ilgili açık ve anlaşılır sorular yöneltilecektir. Sorulara verilen yanıtlar araştırmacılar tarafından not alınacaktır.

Sizden Topladığımız Bilgileri Nasıl Kullanacağız?
Araştırmaya katılımınız tamamen gönüllülük temelinde olmalıdır. Çalışmada sizden kimlik veya çalıştığınız kurum/bölüm/birim belirleyici hiçbir bilgi istenmemektedir. Cevaplarınız tamamıyla gizli tutulacak, sadece araştırmacılar tarafından değerlendirilecektir. Katılımcılardan elde edilecek bilgiler toplu halde değerlendirilecek ve bilimsel yayımlarda kullanılacaktır. Sağladığınız veriler gönüllü katılım formlarında toplanan kimlik bilgileri ile eşleştirilmeyecektir.

Katılımınızla ilgili bilmeniz gerekenler:
Çalışma, genel olarak kişisel rahatsızlık verecek sorular içermemektedir. Ancak, katılım sırasında sorulardan ya da herhangi başka bir nedenden ötürü kendinizi rahatsız hissederseniz cevaplama işini yarıda bırakıp çıkmakta serbestsiniz. Böyle bir durumda çalışmayı uygulayan kişiye, çalışmadan çıkmak istediğinizi söylemek yeterli olacaktır.

Araştırmayla ilgili daha fazla bilgi almak isterseniz:
Bu çalışmaya katıldığınız için şimdiden teşekkür ederiz. Çalışma hakkında daha fazla bilgi almak için ODTÜ öğretim üyelerinden Doç. Dr. Irmak HÜRMERİÇ ALTUNSÖZ (E-posta: hurmeric@metu.edu.tr) ya da araştırma görevlisi Leyla Alkan (E-posta: leyla.salis@metu.edu.tr) ile iletişim kurabilirsiniz.

Yukarıdaki bilgileri okudum ve bu çalışmaya tamamen gönüllü olarak katılıyorum.

(Formu doldurup imzaladıktan sonra uygulayıcıya geri veriniz).

Adı Soyadı	Tarih	İmza
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E. TURKISH SUMMARY / TÜRKÇE ÖZET

Giriş

Tarihin belirli dönemlerinde, tüm Dünya nüfusunu etkileyen hastalık salgınları meydana gelmiştir. İspanyol Gribi, Hong Kong Gribi, SARS, H7N9, Ebola ve Zika (Qiu ve diğerleri, 2017), ulusal ve küresel toplulukların sağlığını, ekonomisini, toplumu ve güvenliğini olumsuz etkileyen pandemi örnekleridir. Dünyanın savaşması gereken mevcut salgın, COVID-19 enfeksiyonudur. Bu enfeksiyon ilk olarak Aralık 2019'da Çin'in Hubei eyaletindeki bir şehir olan Wuhan'da tespit edildi. Virüsün hızlı yayılmasının nedeni solunum yolu ile bulaşmasıdır. Kişiler bazı temel önlemler alarak kendilerini COVID-19'dan koruyabilirler. Bu önlemler maske, mesafe ve hijyen olarak üç ana başlık altında toplanmıştır (CDC, 2020).

COVID-19 salgını, eğitim sistemi, çalışma şekli ve günlük yaşam alışkanlıkları dahil olmak üzere hayatın farklı alanlarında önemli değişikliklere yol açmıştır (Williamson ve diğerleri, 2020; Kim, Kim & Ha, 2021). Okullar salgınla birlikte eğitim sistemlerini yüz yüze eğitimden online eğitime çevirdi. Şirketler, çalışma düzenini ofis tabanlı çalışmadan uzaktan çalışmaya çevirdi. Bu önlemler pandemi sırasında fiziksel etkileşimi kısıtladığı ve insanların enfekte olmasını engellediği için önemli faydalar sağlasa da ciddi sağlık sorunlarına yol açmıştır. Karantina nedeniyle uzun süre evde kalmak kişilerin ruh ve beden sağlığını olumsuz etkilemiştir.

Çin'de bir grup araştırmacı (Wu ve diğerleri, 2021), COVID-19 salgını sırasında zihinsel sağlık sorunlarını anlamak için bir meta-analiz çalışması yapmıştır. Pandeminin, kişilerde ruh sağlığı sorunlarını artırdığını ortaya koydular. Diğer bir önemli çalışma ise, COVID-19 salgını sırasında çocukların ruh sağlığı üzerindeki olası olumsuz sonuçlarını incelemiştir (Javed ve diğerleri, 2020). Bu çalışmanın sonuçlarına göre, çocuklar sosyal izolasyon nedeniyle depresyon, kaygı veya üzüntü gibi psikolojik zorluklarla uğraşmak zorunda kalabilirler.

Tüm bu çalışmalar, COVID-19 pandemisinin insanların hem sosyal hem de özel hayatını kısıtlayan bir dönem olduğunu kanıtlamıştır. Pandeminin etkilerini azaltmak için bireylerin düzenli fiziksel aktivite yapmaları önemlidir.

Dünya Sağlık Örgütü (2020), farklı yaş grupları için çeşitli fiziksel aktivite yönergeleri önermektedir. Kılavuza göre, bir yaşın altındaki bebekler günde birkaç kez

fiziksel olarak aktif olmalıdır. Kılavuz, beş yaşın altındaki çocukların çeşitli fiziksel aktivite ortamlarında günde en az 180 dakika geçirmesi gerektiğini belirtmektedir. 5 ila 17 yaş grubu, günde en az 60 dakika ve haftada üç gün orta ila şiddetli yoğunlukta, kas ve kemikleri güçlendirmeye yönelik fiziksel aktivite yapmalıdır. 18 yaşından büyük yetişkinler, hafta boyunca en az 150 dakika orta yoğunlukta fiziksel aktivite veya 75 dakika şiddetli yoğunlukta fiziksel aktivite yapmalıdır. Kılavuza göre, yaşlı yetişkinler hareketlilik konusunda zorluklar yaşayabilir; bu nedenle, dengeyi geliştirmek ve kendilerini düşmekten korumak için haftada üç veya daha fazla gün fiziksel aktivite yapmalıdır.

Birçok çalışma, aktif bir yaşam tarzı ile iyi oluş arasındaki ilişkiyi açıkça ortaya koymuştur (Norris ve diğerleri, 1992; Goldfield ve diğerleri, 2007; Nopembri ve diğerleri, 2016). Fiziksel aktivitenin yetişkinlere olduğu kadar çocuklara olan faydası da birçok çalışma ile kanıtlanmıştır. Çocukluk döneminde aktif bir yaşam tarzının çocukların fiziksel ve bilişsel sağlığı üzerinde sayısız faydası vardır. Fiziksel aktivite, obezite, tip 2 diyabet ve koroner kalp hastalığı gibi kronik hastalık riskini azaltır. Yapılandırılmamış orta yoğunlukta egzersizi bir fiziksel aktivitenin bile kronik hastalıkları önlemede ve daha sağlıklı yaşamı teşvik etmede çok önemli bir etkiye sahip olduğu kanıtlanmıştır (Sothern ve diğerleri, 1999).

Findlay ve Coplan (2008) tarafından yürütülen bir yıllık bir araştırma, organize spor katılımının utangaç çocuklar üzerindeki etkisini ortaya koymuştur. Araştırma sonuçlarına göre, spor katılımları ile çocukların psikososyal durumları ve iyilik halleri arasında pozitif bir ilişki vardır. Ayrıca bu çalışmada, spor organizasyonlarına katılan çocukların katılmayanlara göre daha yüksek benlik saygısı gösterdikleri ve daha etkili sosyal beceriler kazandıkları görülmüştür.

Fiziksel aktivitenin çocukların sağlığı üzerindeki olumlu etkileri iyi bilinmesine rağmen savaş, doğal afet, pandemi gibi olağanüstü yaşam koşullarında çocukların fiziksel aktivite davranışları olumsuz etkilenebilir. Fiziksel hareketsizliğe yol açan bu durumlar sonucunda çocukların fiziksel aktivite düzeyleri düşebilir. Almanya'da yürütülen bir çalışma, COVID-19 pandemisinin çocukların yaşam kalitesi ve ruh sağlığı üzerindeki etkisini araştırmıştır (Ravens-Sieberer ve diğerleri, 2021). Çalışma sonuçlarına göre, pandemi sırasında gözlemlenebilir ruh sağlığı sorunlarının yaygınlığının

%9,9'dan %17,8'e çıktığı tespit edilmiştir. Ayrıca, çocuklar COVID-19 salgını sırasında öncekinden daha fazla endişe yaşamışladır.

Pombo ve ark. (2021), Portekiz'de COVID-19 pandemisinin okul çağındaki çocukların motor yeterliliği üzerindeki etkisini araştırmak için bir çalışma yürütmüştür. 114 çocuktan alınan motor yeterlilik verilerine göre, çocukların motor yeterlilik seviyeleri, cinsiyetten bağımsız olarak, karantinadan sonra karantina öncesine göre azalma gözlenmiştir. Perez ve ark. (2021) ebeveynlerin pandemi ile ilgili kısıtlamaları nasıl deneyimlediklerini ve çocuklarının hareket davranışlarını nasıl etkilediklerini araştırmayı amaçlamıştır. 5-11 yaş arası çocukların ebeveynleri ile yarı yapılandırılmış görüşmeler sonucunda, ebeveynler yapılandırılmış spor aktivitelerine sınırlı erişim olduğunu ve çocukların sedentar davranışlarında artış olduğunu bildirdiler.

Çalışmanın Amacı

Çalışmanın genel amacı, COVID-19 pandemisinin 5-12 yaş arası çocukların fiziksel aktivite davranışları üzerindeki etkisini ebeveyn raporlarına dayalı olarak incelemektir. Özellikle uyku düzenleri ve ekran temelli davranışlar dahil olmak üzere günlük alışkanlıklar, çocukların iç ve dış mekânda fiziksel aktivite olanakları veli görüşlerine dayalı olarak incelenmiştir.

Araştırma Soruları

Bu çalışmanın amacına yönelik olarak dört araştırma sorusu belirlenmiştir. Aşağıdakiler bu çalışmanın araştırma sorularıydı:

1. COVID-19 pandemisi çocukların fiziksel aktivite davranışlarını nasıl değiştiriyor?
2. COVID-19 pandemisi çocukların uyku düzeni, aktif oyun süresi ve ekrana dayalı davranışlar dahil günlük alışkanlıklarını değiştiriyor mu?
3. COVID-19 pandemisi çocukların mahallede açık/çevresel fiziksel aktivite fırsatlarını kullanmasını nasıl değiştiriyor?
4. COVID-19 pandemisi çocukların kapalı fiziksel aktivite fırsatlarını kullanmasını nasıl değiştiriyor?

Çalışmanın Önemi

Pandemi dönemlerinde çocukların fiziksel aktivite davranışları bu koşullardan olumsuz etkilenebilir. Bu çalışmanın amacı, çocukların pandemi sırasındaki fiziksel aktivite davranışları hakkında bilgi edinmek, fiziksel aktivite olanaklarına erişimlerini

incelemek ve COVID-19 pandemisi sırasında karşılaştıkları zorlukları tespit etmektir. COVID-19 pandemisi tüm dünyayı etkilemeye devam ettiğinden, pandemi ile ilgili kapanmalarda bile çocukların aktif kalması için başta çocuklar olmak üzere tüm yaş gruplarına yönelik organize programlar belirlenmesi gerekmektedir.

Bu çalışma, ebeveynler, eğitimciler ve politika yapıcılar için bütünsel bir bakış açısı sunmuştur. Çocukları pandeminin olumsuz etkilerinden korumak için uygulanabilir ve mevcut önerilere ulaşmak için bu çalışma ailelere rehberlik niteliği taşımaktadır. Çalışmanın sonuçları, çocukların özgürce hareket edebilecekleri dış ortamın önemini de açıkça ortaya koymuştur. Ayrıca, okul yönetimin bu gibi kriz durumlarında süreci iyi yönetmesi ve özellikle öğretmenlerin fiziksel aktiviteye ders planlarında yer vermeleri büyük önem taşımaktadır.

Politika yapıcılar, çocukların zihinsel veya fiziksel olarak yüksek kazançlarına dayalı farklı politikalar izleyebilirler. Politika yapıcılar, uzun vadeli kapanışlar yerine, çocukların iyi bir başlangıç yapmasına hizmet eden alternatifler arayabilirler.

Dünya genelinde pandemi ile ilgili çalışmaların sayısı artarken, Türkiye'de bu yaş grubu ile karma yöntemle yürütülen çalışma sayısı azdır. Bu açıdan bakıldığında bu çalışma ileride yapılacak çalışmalara örnek teşkil etmesi açısından önemlidir. Bu çalışma, ailelerin durumunu ayrıntılı olarak analiz etmesi ve çocukların fiziksel aktivite davranışlarına geniş bir bakış açısı sağlaması nedeniyle mevcut literatüre katkı sağlayacaktır. Pandemi dışında, uzun süre evde kalmamıza sebep olacak olaylarda bu çalışma uygun önlemlerin alınması ve olası kısıtlamalara karşı hazırlıklı olunması için nitelikli bir rehber olmayı amaçlamaktadır.

Yöntem

Araştırma Deseni

Bu çalışmada hem nicel hem de nitel yöntemleri içeren sıralı açıklayıcı tasarım deseni kullanılmıştır.

Örneklem ve Katılımcılar

Nitel veri toplama aracı olan online anketi 165 anne (%80,5) ve 40 baba (%19,5) olmak üzere toplam 205 ebeveyn doldurmuştur. İstenen sayıda katılımcıya ulaşmak için kartopu yöntemiyle katılımcılar çalışmaya davet edilmiştir.

Veri Toplama Araçları

Online Anket

Bu çalışmada nicel veri toplama yöntemi olarak COVID-19 pandemisinin çocukların fiziksel aktivite davranışlarına etkisi hakkında bilgi toplamak amacıyla anket yöntemi kullanılmıştır (EK A). Tarama araştırması, "bir örneklemden sorulara verdikleri yanıtlar aracılığıyla bilgi toplanması" olarak tanımlanır (Check & Schutt, 2012, s. 160). Anketler, araştırmacıların farklı türdeki bilgilere kolay ve ucuz bir şekilde erişmelerini sağlayan veri toplama teknikleridir. Zamandan ve paradan tasarruf etme anket yönteminin avantajları olarak görüşmüştür (Schmidt, 1997).

Anketin oluşturulması için öncelikle konu ile ilgili literatür taranmış ve ilgili çalışmalar detaylı olarak incelenmiştir. İlgili çalışmalarda yer alan soru formlarından hareketle araştırma sorularına yönelik bir anket örneği geliştirilmiştir. Anket soruları asıl araştırmacı ve beden eğitimi alanında 10 yıldır deneyimli bir başka uzman ile birlikte incelenmiştir. Daha sonra kapsam geçerliliğine yönelik geri bildirim almak için alanında uzman üç kişiden görüş alınıp pilot çalışma yapılmıştır. Uzmanlar tarafından verilen geri bildirimler doğrultusunda ankete son şekli verilmiştir.

Anket, Google Formlar kullanılarak çevrimiçi platformda geliştirilmiştir. Çevrimiçi anket, sosyal medya, WhatsApp ve e-posta yoluyla araştırma grubu üyeleri, akrabalar ve yakın çevrenin kişisel temasları ile paylaşılmıştır. Katılımcılar kartopu örnekleme tekniği ile çalışmaya davet edilmiştir. Crouse ve Lowe, kartopu örneklemini "araştırmacıların, hedef kitle ile araştırma ilgisinin belirli bir özelliğini paylaşan bireyler tarafından yapılan yönlendirmeler yoluyla bir araştırma çalışması için bir katılımcı havuzu oluşturmak için kullandıkları bir örnekleme yöntemi" olarak tanımladılar (2018, s.1532). Bu çalışma için, katılımcılardan anketi uygun bulunan ve araştırmaya dahil edilme kriterlerini karşılayan kişilere iletmeleri istenmiştir.

Fiziksel aktivite anketi dört ana bölümden oluşmaktadır. İlk bölümde çocukların günlük alışkanlıkları ile ilgili sorular yer almıştır. Ekran süresi, aktif oyun saatleri ve uyku düzeni bu bölümde sorulmuştur. İkinci bölümde, çocukların yararlandığı açık hava fiziksel aktivite ekipmanının türü ve bu ekipmanla geçirdiği zaman/sıklık belirtilmesi istenmiştir. Anketin üçüncü bölümünde, kapalı alan fiziksel aktivite olanakları ile ilgili sorular yer almıştır. Anketin son bölümünde ise çocukların boş zaman aktiviteleri hakkında sorular sorulmuştur. Tüm bu fiziksel aktivite soruları iki bölüme ayrıldı: pandemi öncesi ve pandemi sırasında. Bu detay, velilerin özellikle dikkat etmesi için büyük harflerle belirtilmiştir.

Yarı yapılandırılmış görüşmeler

Bu çalışmada, nitel veri toplama aracı olarak, COVID-19 pandemisinin çocukların fiziksel aktivite davranışlarına etkisini derinlemesine analiz etmek için yarı yapılandırılmış görüşmeler uygulanmıştır (EK B). Görüşme, araştırmacının katılımcıların deneyimleri hakkında sorular sorarak sosyal dünya hakkında veri topladığı nitel bir araştırma tekniğidir (Savin-Baden & Howell-Major, 2013).

COVID-19 pandemisi sırasında çocukların fiziksel aktivite davranışları hakkında ebeveynlerden karmaşık derinlemesine bilgiler elde etmek için açık uçlu sorular sorulmuştur. Bu açık uçlu sorular, ebeveynlere kendilerini özgürce ifade etme (Savin-Baden & Howell-Major, 2013) ve COVID-19 pandemisi sırasında çocukların fiziksel aktivite davranışlarına ilişkin bakış açılarını paylaşma fırsatı sundukları için görüşmenin özü olarak değerlendirilebilir. Bu yüzden, görüşme yönteminin avantajlarından biri, görüşme senaryosunun ötesine geçme ve gerektiğinde ek sorular sorma yeteneğidir (Savin-Baden & Howell-Major, 2013).

Görüşme yapılacak kişiler daha önce anketi doldurmuş kişiler arasından seçilmiştir. Anketi dolduran kişilerden ulaşılabilir olanların hepsine ulaşılmış ve görüşmeye katılmayı onaylayanlarla görüşme yapılmıştır. Görüşmeler biri baba yedisi anne olmak üzere toplam yedi ebeveyn ile yapılmıştır.

Görüşmenin hazırlık süreci kadar, görüşmelerin uygulanması da büyük öneme sahiptir. Bu çalışma kapsamında, görüşmeler yürütülürken birtakım etik ilkeler dikkate alınmıştır (Fraenkel & Wallen, 2012):

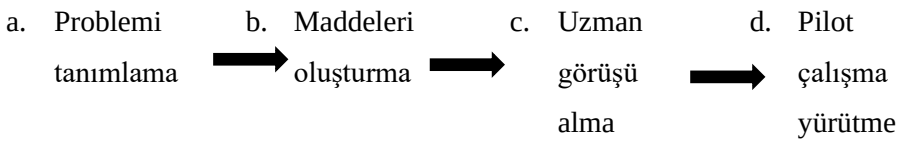
1. Görüşmeler sırasında, katılımcıların özel hayatı, ekonomik koşulları vs gibi detaylara dikkat edilerek eleştirel olmayan nazik bir bakış açısı ile sorular sorulmuştur.
2. İkili soruların doğası katılımcıyı sınırlar ve katılımcıyı daha fazla konuşmaya cesaretlendirmez. Bu yüzden görüşmelerde mümkün olduğunca açık uçlu sorular sorulmuştur.
3. Görüşme sırasında, art arda birden fazla soru sorulması katılımcının önceki soruları unutmasına, önemli detayları atlamasına sebep olacağı için sorular arasında katılımcıya cevaplaması için yeterli alan bırakılmıştır.

Görüşme soruları, ankette yer alan konuları detaylıca incelemek ve belirsiz noktaları açığa kavuşturmak amacıyla tasarlanmıştır. Kapsam geçerliliği için motor gelişim

alanında iki uzman görüşmeyi incelemiş ve içerikle ilgili geri bildirimde bulunmuştur. Uzman görüşleri alındıktan sonra üç ebeveyn (iki baba ve bir anne) ile bilişsel görüşmeler yapılmıştır. Bilişsel görüşme Beatty ve Willis tarafından "yanıtın kalitesini değerlendirmek veya sorunun yazarının verdiği bilgiyi oluşturup oluşturmadığını belirlemeye yardımcı olmak için kullanılan anket yanıtları hakkında ek sözlü bilgiler toplarken taslak anket sorularının yönetimi" olarak tanımlanmaktadır (2007, s.288)". Bilişsel görüşmenin amacı, anlatımın içeriğe uygun olmasını, katılımcıların soruları kolayca anlayabilmesini ve soruların çalışmanın amacını yansıtmasını sağlamaktı. Ebeveynlerin bilişsel görüşmelerinden alınan dönütlere dayalı olarak sorular yeniden ele alınarak görüşmeye son şekli verilmiştir.

Veri Toplama Süreci

Verilerin toplanması için Orta Doğu Teknik Üniversitesi İnsan Konuları Etik Kurulu'ndan (EK C) onay alınmıştır. Ayrıca, katılımcıların onayı alınmıştır (EK D). Katılımcılara çalışmanın amacı anlatılmıştır ve paylaştıkları bilgilerin gizliliği hakkında bilgilendirme yapılmıştır. Araştırma katılımcıların gönüllü katılımına dayandığından, ankete/görüşmeye devam etmek istememeleri durumunda istedikleri zaman geri çekilebilecekleri konusunda bilgilendirilmiştir. Katılımcılar, ayrıca anket ve görüşmenin tamamen isimsiz olması hakkında bilgilendirilmiştir. Online anket için anket veri toplama süreci 12 Mart 2021'de başlamış ve tam bir yıl sürmüş ve 12 Mart 2022'de sona ermiştir. Nicel veri toplama prosedürleri tamamlandıktan sonra nitel veri toplamak için sekiz veli ile görüşmeler yapılmıştır. Bu süreç 31 Mayıs'ta başlayıp 3 Haziran 2022'de sona eren bir haftada tamamlandı. Katılımcıların izinlerine bağlı olarak görüşmeler kaydedildi ve yazıldı. Araştırmanın anket geliştirme süreci şekil 1'de gösterilmiştir (Büyüköztürk, 2005)



Veri Analizi

Nicel veri kümesi olan anket sonuçları, Microsoft / Excel (2021) programı kullanılarak analiz edilmiştir. Anketi toplamda 208 ebeveyn doldurmuş olup, bunlardan üçü Türkiye'de yaşama kriterini karşılamadığı için hariç tutulmuştur. 205 çocuktan

alınan fiziksel aktivite, ekran süresi, uyku düzeni gibi bilgilerin tanımlayıcı istatistikleri (frekans, yüzdelik vs.) tablo ve grafik şeklinde görsel olarak sunulmuştur.

Çalışmanın nicel kısmı için sekiz veli ile yapılan görüşmeleri analiz etmek için refleksif tematik analiz yaklaşımı kullanılmıştır. Bu yaklaşımın temel amacı, verilerdeki örüntüleri (temaları) belirlemek, analiz etmek ve raporlamaktır (Braun & Clarke, 2006). Temalar, veri setinin yorumlanmasına dayalı belirli örüntüler olarak tanımlanabilir (Braun & Clarke, 2019). Tematik analiz, fiziksel aktivite alanında deneyimli üç uzman tarafından yapılmıştır.

Tüm görüşmeler, katılımcıların kişisel bilgilerinin gizliliği ilkesi esas alınarak yazıya dökülmüştür. Transkriptler analiz edilmiştir. Transkriptler, MAXQDA (2022) programında, Braun ve Clarke (2006) tarafından önerilen refleksif tematik analiz yaklaşımının 6 aşaması baz alınarak analiz edilmiştir; 1) Verileri tanıma, 2) Başlangıç kodlarını oluşturma, 3) Tema arama, 4) Temaları gözden geçirme, 5) Temaları tanımlama ve adlandırma, 6) Rapor oluşturma.

Bulgular

Bu çalışma, çocukların fiziksel aktivite davranışlarının COVID-19 pandemisinden nasıl etkilendiğini araştırmayı amaçlamıştır. Bu bölüm, sırasıyla nicel sonuçların dört alt kategorisine ve nitel sonuçların dört ana temasına dayalı betimleyici sonuçlar sunar.

Nicel Bulgular

COVID-19 pandemisi çocukların uyku düzeni, aktif oyun süresi ve ekran zamanı dahil günlük alışkanlıklarını etkiledi mi?

COVID-19 pandemisi sırasında, çocukların günlük alışkanlıkları incelenmiş olup bazı değişkenlerde önemli farklılıklar bulunmuştur. Çocukların ekran karşısında geçirdiği sürede belirgin bir artış gözlemlenmiştir. En yaygın kullanılan ekran araçlarından telefon ve tablet ile geçirilen sürede de pandemi öncesine göre artış saptanmıştır pandemi döneminde bir diğer artış da çocukların bilgisayar oyunlarına ayırdıkları vakitte yaşanmıştır. Çocukların aktif oyun süreleri incelendiğinde, açık alanda geçirilen sürede azalma olmuşken kapalı alan/ev içinde geçirilen sürede artış saptanmıştır. Son olarak günlük rutinin bir parçası olan uyku saatlerine bakıldığında, çok büyük farklılıklar olmamakla beraber pandemi sırasında çocukların uyku saatlerinde küçük değişimler gözlemlenmiştir.

COVID-19 pandemisi yaşanılan çevrede bulunan açık alan fiziksel aktivite fırsatlarının kullanımını nasıl değiştirdi?

Çocukların COVID-19 pandemisi sırasında yaşanılan çevrede bulunan açık alan fiziksel aktivite imkânlarından ne ölçüde yararlandığı incelenmiştir. Sonuçlara göre, pandemi öncesine göre kıyasla pandemi sırasında açık alan aktivite katılımında belirgin bir düşüş gözlemlenmiş ve en belirgin düşüş kaydırak, salıncak, tahterevalli ve yüzme havuzları gibi ortak kullanım alanlarında yaşanmıştır. En az düşüş de futbol ve voleybol sahası gibi açık sahalarda yaşanmıştır.

Çocukların açık hava fiziksel aktivite olanaklarını kullanımlarının pandemi sürecinden nasıl etkilendiğini detaylı olarak incelemek için bu olanakları kullanım sıklığı da incelenmiştir. Pandemi öncesi ve pandemi sırasında çocukların açık alan fiziksel aktivite kullanım sıklığı karşılaştırıldığında, açıkça görülüyor ki pandemi sırasında orta ve yüksek yoğunlukta açık alan fiziksel aktiviteye katılım ciddi oranda azalmış, buna nazaran, pandemi sırasında düşük yoğunlukta açık alan fiziksel aktivitelerine katılımda artış gözlemlenmiştir.

COVID-19 pandemisi çocukların ev içi/kapalı alan fiziksel aktivite imkanlarının kullanımını nasıl değiştirdi?

Çocukların COVID-19 pandemi sırasında ev içinde ne ölçüde fiziksel aktivite yaptıkları incelendiğinde, pandemi öncesine göre ciddi bir değişim gözlemlemiştir. Ancak, kapalı alan fiziksel aktivite imkanlarının kullanım sıklığı detaylı olarak incelendiğinde pandemi öncesine kıyasla, pandemi sırasında düşük yoğunlukta fiziksel aktiviteye katılımda belirgin bir artış saptanmıştır.

COVID-19 pandemisi çocukların fiziksel aktivite davranışlarını nasıl değiştirdi?

Bu soruda amaç, çocukların genel olarak fiziksel aktivite davranışlarının COVID-19 pandemisinden nasıl etkilendiğini bulmaktır. Bu amaçla, iki bölümden oluşan bu soruda çocukların spor kulübü bilgisi ve okul dışında eğlence/rekreasyon amaçlı yaptıkları fiziksel aktiviteler sorulmuştur.

Çocukların spor kulübü hakkında elde edilen bilgilere göre, pandemi öncesine kıyasla pandemi sırasında spor kulübüne devam eden çocukların sayısında düşüş meydana gelmiştir. Bu düşüşe rağmen ilginç bir şekilde, pandemi sırasında bir çocuk badminton kursuna başlamıştır. Çocukların spor kulübündeki antrenman günleri incelendiğinde, pandemi sırasında belirgin bir düşüş kaydedilmiştir.

Çocukların pandemi öncesi fiziksel aktivite davranışları incelendiğinde, çocukların ağırlıklı olarak bisiklete binme, oyun parkında oynama ve daha düşük yoğunlukta scooter kullanma gibi fiziksel aktivitelerle uğraştıkları görüldü. Fiziksel aktivite davranışlarını daha detaylı analiz etmek için, pandemi öncesi ve pandemi sırasında çocukların fiziksel aktivite katılım sıklıkları incelenmiştir. Pandemi öncesinde orta ve yüksek yoğunlukta fiziksel aktiviteye katılım gösteren çocukların sayısı pandemi sırasında düşmüştür.

Nitel Bulgular

COVID-19 pandemisi sırasında uyku düzenleri

Ebeveynler, COVID-19 salgını sırasında yatma saatleri değişse bile çocuklarının yeterince uyumasını sağlamaya çalıştı. Ayrıca bazı çocuklar uyku bozukluğunun olumsuz sonuçlarıyla mücadele etmek zorunda kalırken, bazı çocuklar uyku kalitesinde herhangi bir sorun yaşamamıştır

COVID-19 pandemisi sırasında çocukların ekran alışkanlıkları

Ebeveynler, çocuklarının ekran başında geçirdikleri sürenin, günlük yaşam rutinlerindeki pandemi kaynaklı değişikliklerden (örn., sosyal mesafe, çevrimiçi eğitime geçiş, sınırlı iç/dış mekân oyun olanakları) dolayı arttığını doğruladı. Ebeveynlerin çoğu, yaşam koşullarını yeni normale nasıl ayarladıklarını ve çocuklarını ekranın zararlı etkilerinden nasıl koruduklarını büyük bir özveriyle anlattılar. Tüm ebeveynler COVID-19 salgını sürecinde mental ve fiziksel olarak yorulduklarını ve çocuklarına oyun arkadaşı olarak yetmediklerini, bu yüzden ekran kurallarını esnetmek zorunda kaldıklarını ve bundan memnun olmadıklarını dile getirdi.

COVID-19 salgını sırasında fiziksel aktivite düzeyleri

COVID-19 pandemisi sırasında fiziksel aktivite seviyesi genel olarak düştü ve çocuklar açık alan fiziksel aktivite olanaklarına erişimde bazı zorluklar yaşamıştır. Karantina nedeniyle evde geçirilen zaman artmış ve aileler birçok sorunla uğraşmak zorunda kalmıştır. Yapılan görüşmelere göre aileler, çocuklarını aktif tutmak ve onları fazladan ekran izlemekten korumak için büyük çaba sarf etmiştir. Ayrıca aileler, çocuklarının fiziksel olarak aktif olmalarına yardımcı olmak açısından okul desteğinin ne kadar önemli olduğunu açıkça ifade etmişlerdir.

COVID-19 pandemisinin davranışsal ve sağlıkla ilgili sonuçları

Her aile pandemi sürecini faklı şekilde deneyimleyip, zorluklar karşısında kendilerine en uygun olan çözümleri uygulamaya çalışmışlardır. COVID-19 pandemisi dışarıda vakit geçirme imkânı bulan çocuklar için daha kolay geçerken, evde uzun süre kalan çocuklar açısından daha zorlu geçmiştir. Ayrıca kardeşi olan çocuklar evde sosyalleşme fırsatı bulmuştur. Uzun süren karantina döneminin sonucu olarak, sosyal etkileşimde ciddi azalma olmuştur ve çocuklar tekrar sosyal hayata karıştıklarında uyum sorunları yaşamıştır. Ayrıca çocuklar kısıtlı oldukları sürede yoğun duygularla mücadele etmek zorunda kalmışlar ve bu da beraberinde yeni normale uyum problemleri getirmiştir.

Tartışma

COVID-19 salgını sırasında çocukların günlük alışkanlıklarındaki değişiklikler

Bu çalışmada çocukların ekran zamanı, aktif oyun saatleri ve uyku düzenini içeren günlük rutinleri incelenmiştir. Sonuçlar, günlük rutinlerin değişkenleri olan ekran süresi, aktif oyun saatleri ve uyku düzeninin COVID-19 salgını ve ilgili kısıtlamalar tarafından bozulduğunu gösterdi. Çalışmada, ebeveynler tarafından ekran süresinde genel bir artış bildirilmiş olmasına rağmen aileler uzamış ekran süresi konusunda hoşnut olmadıklarını ifade etmiştir. Bu bulgular, COVID-19 pandemisinin çocukların günlük alışkanlıkları üzerindeki etkilerini inceleyen ilgili literatürle uyumlu çıkmıştır (Xiang ve diğerleri, 2020). Canlı derslere katılım ve evde kısıtlı aktivite imkânları gibi sebepler de çocukları ekrana daha fazla yönelten sebeplerdir. Ekran kullanımını kısıtlamak ve ekrandan olumlu anlamda faydalanmak için, elektronik aletler fiziksel aktivite yönelten bir aracı olarak kullanılabilir (telefon, tablet, bilgisayar vs.)

Diğer bir araştırma sorusu ise çocukların aktif oyun saatlerini ile ilgili olup, sonuçlar, çocukların açık havada oyun ihtiyaçlarının gelişimsel ihtiyaçlarını karşılamaya yetmediğini gösterdi. COVID-19 pandemisi sırasında çocukların kapalı alanda aktif oyun saatleri artarken, açık havada aktif oyun saatleri önemli ölçüde azaldı. Bu bulgular, Kanadalı çocukların fiziksel aktivite değişikliklerini incelemek için yürütülen mevcut literatürle uyumluydu (McCormack ve diğerleri, 2020; Mitra ve diğerleri, 2020). Açık hava spor imkanlarının yasaklanması ve ailelerin çocuklarının sağlığı hakkında duydukları endişe bu oyun saatlerindeki değişimin sebepleri olarak gösterilebilir. Ayrıca, ailelerin çocuklarını hastalıktan koruma istekleri onlarda fazla strese sebep

olup çocuklarının dışarıda vakit geçirmelerine karşı olumsuz bir yaklaşım sergilemelerine sebep olabilir (Johnson ve diğerleri, 2021). Ebeveynler, ebeveynlik zorluklarını yönetme stratejileri konusunda uzmanlardan destek almalıdır (Adams ve ark., 2021).

Görüşmeler yoluyla uyku düzenleri derinlemesine analiz edilmiş ve ebeveynler çoğunlukla çocukların uyku düzenlerinde herhangi bir bozulma olmadığını belirtmişlerdir. Bazı çocuklar uyku sorunları ile mücadele etmek zorunda kalsa da çocukların çoğu COVID-19 pandemisi sırasında yeterince uyudu. Bu bulgular Pietrobelli ve ark. (2020) ve Guerrero ve ark. (2020) tarafından yapılan çalışmalarla örtüşmekte olup, çocukların uyku düzenlerinde olumsuz değişiklikler olmasına rağmen çocukların çoğunun uyku rehberine uyduğu belirtilmiştir.

COVID-19 Pandemisi Sırasında Açık Havada Fiziksel Aktivite

Bu çalışmada çocukların açık hava fiziksel aktive imkanlarından ne ölçüde yararlandığı incelenmiştir. Sonuçlar açıkça gösteriyor ki pandemide çocukların açık havada geçirdikleri vakitte önemli ölçüde azalma olmuş ve oyun parkları gibi açık hava spor imkânlarından da daha az yararlandıkları belirtilmiştir. Mevcut çalışma sonuçları, açık hava eğlence tesislerinin kapatılmasının açık hava fiziksel aktivitelerine katılımın azalmasıyla bağlantılı olduğu sonucuna varan Kanada'dan yapılan önemli bir çalışma tarafından desteklenmiştir (Mitra ve ark., 2020). En belirgin düşüş kaydırak, salıncak, tahterevalli ve yüzme havuzları gibi ortak kullanım alanlarında yaşanmıştır. En az düşüş de futbol ve voleybol sahası gibi açık sahalarda yaşanmıştır. Bunun sebebi ailelerin çocuklarının güvenli şartlarda fiziksel aktivite katılımlarını sağlamak için bulaş riskinin en az olduğu ve en az temas gerektiren aktivitelere katılıma izin vermesi olabilir.

COVID-19 Pandemisi Sırasında Kapalı Alan Fiziksel Aktivitesi

Bu çalışmada çocukların kapalı alan fiziksel aktivite imkanları incelenmiş ve kapalı alanda geçirilen vakitte belirgin bir artış saptanmıştır. Bu artışın sebepleri uzun süren karantina dönemi ve yapılandırılmış fiziksel aktivite imkânlarına erişimin kısıtlı olması olabilir (Riazi ve ark., 2021). Ayrıca karantina nedeniyle, çocukların evde geçirdikleri zaman arttı ve bu da bakıcılara (çoğunlukla anneler) aşırı bağımlı olmalarına ve diğer insanlarla birebir iletişim eksikliğine neden oldu (Singh ve diğerleri, 2020). Ancak, Araújo ve diğerlerinin (2021) literatüründe belirtildiği gibi, sosyal ilişkilerin olmaması ve uzun süre evde kalmanın çocukların hem zihinsel hem duygusal hem de

fiziksel gelişimi üzerinde uzun vadeli etkileri olabilir. COVID-19 pandemisinin çocukların gelişimi üzerindeki olumsuz etkisini en aza indirmek için eğitimciler, ebeveynleri oyun fırsatları konusunda eğitme ve hareketli yaşamı desteklemek için fiziksel aktiviteyi günlük rutinlere entegre etme sorumluluğunu üstlenebilir.

COVID-19 Pandemisi Sırasında Fiziksel Aktivite

Bu çalışmada çocukların COVID-19 pandemisi sırasındaki fiziksel aktivite davranışlarını incelemek için spor kulübü bilgisi ve okul dışında yapılan fiziksel aktivitelere bakılmıştır. Çocukların spor kulübü hakkında elde edilen bilgilere göre, pandemi öncesine kıyasla pandemi sırasında spor kulübüne devam eden çocukların sayısında ciddi bir düşüş meydana gelmiştir. Bu düşüşe rağmen ilginç bir şekilde, pandemi sırasında bir çocuk badminton kursuna başlamıştır. Çocukların spor kulübündeki antrenman günleri incelendiğinde, pandemi sırasında belirgin bir düşüş kaydedilmiştir. Pandemi sürecinde spor kulüplerinin kapalı olması bu düşüşün sebebi olabilir (Razi & Nasiri, 2022). Spor kulüpleri, küresel çaplı krizlerde, yaşam kalitesini artırmak ve dayanıklılığı artırmak için güvenlik kurallarına özen göstererek sportif programlarını yürütmeye devam etmelidir (Constantini ve diğerleri, 2021).

Çocukların okul dışında rekreasyonal amaçla yaptıkları fiziksel aktivede de bir azalma görülmüştür (Mutz & Gerke, 2021). Uzun süren karantina dönemi çocukların fiziksel aktivite düzeylerinin azalmasında etkili olmuş olabilir. Bu azalmanın farkında olarak aileler çocuklarını fiziksel olarak aktif tutmanın yollarını aramışlardır. Dans etmek (Widyaningsih ve diğerleri, 2021), aile temelli aktiviteler yapmak (Evans ve diğerleri, 2020) ve hayvanlarla oynamak (Moore ve diğerleri, 2020), karantina sürecinde çocukları aktif tutmanın en yaygın yollarıydı. Ayrıca çocukların online beden eğitimi ve spor dersleri hakkında sorular sorularak okul tarafından fiziksel aktivitenin ne kadar desteklendiği incelenmiştir. Öğretmenler tarafından esneme, gerinme vs. gibi aktivitelere ek olarak ev ödevi verilse de aileler için bu aktiviteler çok yeterli gelmemiştir. Politika yapıcılar (Millî Eğitim Bakanlığı, Gençlik ve Spor Bakanlığı vb.), öğretmenlerin eğitsel yeniliklere katılımını sağlamak için üç temel ihtiyacı (özerklik, yeterlilik ve ilgililik) karşılayarak öğretmenleri desteklemelidir (Gorozidis & Papaioannou, 2014).

COVID-19 pandemisinin Çocukların Sağlığı ve Davranışlarına Etkisi

Bu çalışmanın sonucunda COVID-19 pandemisinin çocukların sağlığı ve davranışları üzerinde etkili olduğu bulunmuştur. Bunlardan ilki ailelerin çocukların hasta olmasından duydukları endişe olup onların hayatına kısıtlayıcı müdahalelerde bulunmasıdır. Ailelerin enfeksiyon korkusu yaşamalarının çocuklar üzerindeki etkileri incelenip aileler gerektiği takdirde bu korku ile mücadele etme yöntemleri hakkında bilgilendirme yapılmalıdır. Ayrıca bu çalışmada kilo alımı pandeminin fiziksel beden üzerindeki olumsuz etkisi olarak tanımlanmıştır. Çocukların yaşadığı yoğun duygular da pandeminin getirdiği sonuçlar arasındadır. Wijaya ve diğerleri tarafından önerildiği gibi (2022), ebeveynler çocukların sosyal oyunlar oynama, bahçe işleri ve hikâye anlatma gibi aile eğlence etkinliklerine katılarak güçlü duygularını düzenlemelerine yardımcı olabilir.

Öneriler

Gelecekteki fiziksel aktivite çalışmaları şunları dikkate almalıdır;

1. Çalışmaya çocuklar ve ikincil bakım verenleri dahil edilmelidir.
2. Farklı yaş gruplarından çocuklar çalışmaya katılmalı ve cinsiyet farkları incelenmelidir.
3. Farklı sosyoekonomik ve eğitim düzeylerinden aileler incelenerek onlara uygun fiziksel aktivite rehberleri hazırlanmalı ve çocukların günlük rutinlerinin nasıl korunacağını hakkında bilgilendirme yapılmalıdır.
4. COVID-19 pandemisinin çocukların sağlığı ve fiziksel aktivite düzeyleri üzerindeki uzun süreli etkileri incelenmelidir.
5. COVID-19 pandemisi sırasında çocukların uyku düzeni, ekran süresi ve fiziksel aktivite düzeylerine ilişkin anne ve babaların algıları arasındaki farkları incelenebilir.

F. THESIS PERMISSION FORM / TEZ İZİN FORMU

(Please fill out this form on computer. Double click on the boxes to fill them)

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TEZİN ADI / TITLE OF THE THESIS (**İngilizce** / English): A Mixed Methods Approach to Investigating the Changes of Physical Activity Behaviors of Children During the COVID-19 Pandemic: Parent Report

TEZİN TÜRÜ / DEGREE: **Yüksek Lisans** / Master ☒ **Doktora** / PhD ☐

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