

ORIGINAL ARTICLE

Game Therapy as an Intervention for Computer Game Addiction and Loneliness among Primary School Students

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Main Points

- Computer game addiction is common among primary school children.
- It is well-established that there is a positive correlation between computer game addiction and loneliness in children and adolescents.
- Game therapy has a positive effect on computer game addiction in primary school children.
- Game therapy has a positive effect on loneliness levels in primary school children.

Abstract

The study aims to examine the effect of game therapy on computer game addiction and loneliness in children attending a primary school in Kocaeli. The study was carried out in a pre-test – post-test quasi-experimental design. Data were collected with a sociodemographic data form, loneliness scale for children, and children's computer game addiction scales. The intervention group ($n = 22$) and the control group ($n = 23$) were determined after the pretest data. The intervention group received game therapy for 6 sessions. Descriptive statistics, Kolmogorov-Smirnov, and Wilcoxon tests were applied in the analyses. The findings were calculated at a 95% confidence interval and a .05 significance level. As a result, it was revealed that children's computer game addiction ($p = .006$) and loneliness levels ($p = .041$) decreased statistically significantly after game therapy. It can be said that implementing more game therapy interventions, especially for primary school children, will have a positive effect on children's computer game addiction and loneliness levels.

Keyword: Computer game addiction, game therapy, loneliness, primary school child

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Introduction

Technology encompasses a wide range of technical systems and tools that significantly impact people's lives by simplifying the process of problem-solving and saving time. Therefore, technology has become indispensable to daily life (Roser et al., 2023). The Internet, a key product of technological advancement, is utilized by roughly two-thirds of the global population according to 2023 statistics (InternetSociety.org, 2024). Data from the Turkish Statistical Institute shows that, in 2022, 94.1% of households in Türkiye had access to the Internet at home. This suggests that nearly the entire population has widespread and convenient access to

the Internet. The rapid expansion of Internet use continues to shape the lives of nearly all individuals, with both positive and negative effects (TÜİK, 2022).

With advancements in Internet technology and easier access, online games have become a platform for entertainment, leisure, and socialization. Therefore, they have become popular activities for children, adolescents, and young adults (Liu & Chang, 2016; Zhu & Chen, 2021). The exciting features provided by computer games played online or offline, such as multiplayer games, encourage users to spend more time playing games (Montag et al., 2021). Game addiction is defined as a compulsive or



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uncontrollable addiction that results in a severe loss of control over gaming habits and negatively impacts self-care, interpersonal relationships, and school/work life (Alzahrani et al., 2017; clevelandclinic.org, 2022; Lee & Kim, 2017). Game addiction is especially common among adolescents and children, causing serious problems in individuals' lives (Ustinavičienė et al., 2016). Computer game addiction, which is common in children, negatively affects psychological balance, sleep quality, academic performance, and especially social relationships (Aziz et al., 2021). Meanwhile, it can cause children's social relationships to deteriorate, thus increasing loneliness (King & Delfabbro, 2016; Toker & Baturay, 2016). Game addiction negatively affects communication, disrupts social communication and interaction, and pushes individuals toward loneliness. Students and adolescents, particularly at the primary school level, who lack the knowledge to use the Internet correctly and effectively, are considered the highest risk group (Akarsu & Akgün Kostak, 2022).

Perlman and Peplau define loneliness as a distressing psychological condition that arises when an individual recognizes a disparity between their current social relationships and the desired social connections (Perlman & Peplau, 1986). Loneliness indicates that there are significant deficiencies in an individual's relationships and that their interpersonal relationship skills are inadequate. For children, loneliness is more specifically defined as the subjective emotional experience of alienation and dissatisfaction based on one's own perceptions of their social status and friendship status in a peer group (Maes et al., 2015). Establishing successful relationships with peers is an important indicator of children's social competence (Kök Eren & Örsal, 2018). Children aged 9 – 10 begin to socialize during this period, and learning and school success gain importance at this age. Social development is characterized by acquiring knowledge and skills that enhance interactions within the school, family, and broader community, as well as fostering effective communication with others. Emotional development refers to the skill of understanding and controlling emotions while engaging in effective communication with others (Malik & Marwaha, 2022). Stockdale and Coyne (2018) found that in a study on computer game addiction, individuals experienced emotional problems, including depression and anxiety, and felt more socially isolated (Stockdale & Coyne, 2018). Guo et al. (2020) found that Internet use prevents children from socializing and causes individuals to experience challenges in face-to-face communication alone (Guo et al., 2020). Traş (2019) found that adolescents with Internet addiction were significantly associated with loneliness (Traş, 2019). In another study, it was stated that mobile game addiction was associated with depression, loneliness, and social anxiety (Wang et al., 2019).

As stated, children's play is important for both their social and emotional development (Malik & Marwaha, 2022). Encompassing a wide range of fields, play is an activity that constitutes the most natural aspect of life. Play, which is as important as basic life needs for children, prevents neuron loss by helping the development of synapses in the brain. Game therapy is a method applied by trained game therapists that aims to solve children's psychosocial problems, socialize, and increase the level of development. Children often cannot sit and talk about their problems for as long as adults expect. Children often prefer not to discuss their problems directly as adults

might; instead, they tend to express themselves spontaneously through play. Game therapy is effective in helping children express themselves, reveal problems, and reveal their feelings (Swank, 2008).

A study found in the literature revealed that a psychoeducation program based on cognitive-behavioral game therapy had a significant impact on reducing both game addiction and aggression levels (Söylemez & Ayas, 2023). After the game therapy was applied to primary school children, it was reported that students' aggression levels decreased (Kourosh et al., 2019). Game therapy applied to hospitalized children decreased anxiety levels during their hospital stay and decreased pain levels due to the intervention (Godino-Iáñez et al., 2020). An improvement in quality of life was observed following a game therapy intervention centered on the parent – child relationship for preschool-aged children (Aghdam et al., 2020). Game therapy applied to children is seen as an opportunity to solve psychosocial problems and socialize the child. Since children are an important determinant for the future of society, interventions that support social and emotional development are an important factor in raising healthy children. Considering this information, it is believed that children's game addiction may cause deterioration of social relationships and thus increase loneliness.

As per the regulation released by the Ministry of Health in 2011, school health nurses are responsible for identifying the health priorities of students and for planning and implementing comprehensive nursing interventions aimed at promoting positive mental health as part of health protection and development efforts (Republic of Türkiye Ministry of Health, 2011). Accordingly, it is very crucial for nurses to carry out practices that contribute positively to increasing mental and social health, growth, and development by considering the problems detected in students while planning their interventions. They should identify the causes that lead to social, behavioral, physical, or academic problems in students' growth and development processes at an early stage, plan appropriate nursing interventions, and evaluate the results.

A literature review indicates that there are limited studies investigating the effects of game therapy on improving quality of life, decreasing aggressive behaviors and game addiction, and reducing anxiety in children (Aghdam et al., 2020; Godino-Iáñez et al., 2020; Kourosh et al., 2019; Söylemez & Ayas, 2023). It is believed that game therapy could positively influence the levels of addiction and loneliness in primary school children struggling with computer game addiction. This study aims to investigate the impact of game therapy on reducing computer game addiction and loneliness among primary school students.

Material and Methods

Research Design

This study employs a quasi-experimental design, incorporating both pre-test and post-test measurements.

Hypothesis of the Study

Game therapy has an effect on reducing computer game addiction and loneliness.

Population/Sample of the Study

In this study, 9 – 10 age group students (fourth-grade students) in a primary school affiliated to the Provincial Ministry of National Education in Kocaeli province constituted the study population.

Inclusion criteria: Being 9 – 10 years old, studying in the relevant primary school affiliated to the Provincial Ministry of National Education, having no psychosocial barriers to communication, agreeing to take part in the study, and obtaining informed consent from both parents and the child.

Exclusion criteria: Refusal to join the study, not speaking Turkish.

Children meeting the inclusion criteria were incorporated into the sample using the G Power 3.1.9.4 software. The calculation for the sample size was based on a confidence level of .05, a statistical power of 90%, and a medium effect size, as recommended by the referenced study (Ugurlu et al., 2016) was calculated that at least 36 children in total should constitute the sample. A stratified randomization method was applied. In determining the groups, the “Children’s Computer Game Addiction Scale” was first applied to four branches in the fourth grade. After the pre-test data of the research was received, the two branches with the highest computer game addiction were included in the intervention group (*n* = 23) and the other two branches were included in the control group (*n* = 22).

Data Collection Tools

Data were collected face-to-face between December 2023 and January 2024 using the Socio-demographic Data Form, Loneliness Scale for Children, and Child Computer Addiction Scale.

Socio-demographic Data Form: The form, developed by the researchers based on the literature, includes questions for children regarding their gender, the presence of Internet and tablets at home, the availability of a personal room, and who makes decisions about the games played and their duration (Kök Eren & Örsal, 2018; Ugurlu et al., 2016).

Loneliness Scale for Children: Turkish adaptation studies of the scale developed by Asher, Hymel, and Renshaw (1984) to determine the loneliness levels of children were conducted by Kaya (2005) (Asher et al., 1984; Kaya, 2005). The scale consists of 24 items. Ten items (3, 6, 9, 12, 14, 17, 18, 20, 21, and 24) have negative meanings. Six items (1, 4, 8, 10, 16, and 22) have positive meanings. Eight items (2, 5, 7, 11, 13, 15, 19, and 23) are used as fillers. Scores from the scale are calculated over 16 items. The scale is scored on a five-point Likert-type scale, where the answer “It is not always true for me” is given a score of 5, while the answer “It is always true for me” is given a score of 1. The scale has a single-factor structure, and the increase in the total score indicates an increase in the level of loneliness. The minimum score that can be obtained from the scale is 16, and the maximum score is 80. The reliability score of the scale was found to be .87.

Child Computer Game Addiction Scale: Children’s computer game addiction scale is a 5-point Likert-type scale developed by Horzum et al. (2008). The scale consists of 4 factors and 21 questions (Horzum et al., 2008). The lowest score is 21 and the highest score is 105. The sub-dimensions are “inability to quit the game,” “associating the game with life,” “disrupting tasks due to the

game,” and “preferring the game to other activities.” “Inability to quit the game” (items 1 – 10) has a minimum score of 10 and a maximum score of 50 points, internal consistency coefficient of .83. “Associating the game with life” (items 11 – 14) has a minimum score of 4 and a maximum score of 20 points, internal consistency coefficient of .60. “Disrupting tasks due to the game” (items 15-17) has a minimum score of 3 and a maximum score of 15 points, internal consistency coefficient of .50. “Preferring the game to other activities” (items 18 – 21) minimum score of 4 and a maximum score of 20 points, with an internal consistency coefficient of .85. As the scale score increases, the level of addiction increases.

Implementation of Game Therapy

The game therapy intervention was implemented by the first author, an expert in public health nursing with a play therapy certificate, and the second author, an expert in mental health and psychiatric nursing. Before starting the implementation, the appropriate hours were determined by contacting the classroom teacher. Game therapy was completed over a total of six sessions. Each game therapy session was completed in approximately 45 minutes. The content of play therapy is given in Table 1 based on expert opinions. Therapy sessions were held on the same day and time every week in the same training room. The training room had tables and chairs suitable for the students (in terms of height and weight). There was adequate lighting, heat, and light. It was emphasized to the students that the activities carried out to avoid grade anxiety were not related to the lessons, and all these processes were treated sensitively. The authors used the *Publication Manual of the American Psychological Association* (APA, 2010) as a guide for using non-discriminatory language. Researchers treated students’ culture, religion, gender, or differences with respect.

It was difficult to keep the children’s concentration throughout the play therapy, but short breaks and engaging games were chosen.

The aim of the planned six sessions is to contribute to children’s cognitive development, emotional-social development, motor development, and language development. It was desired to create environments where children could express their feelings and reveal their creative skills. In this direction, after introducing ourselves as researchers, the first session of play therapy began with an activity of getting to know each other. In this activity, children were asked to stand up and form a circle, and the instructions of the activity were explained: “Each of us will move

Table 1.
Game Therapy Content

Session	Event Name	Duration
First session	Getting to know each other activity	45 minutes
Second session	Origami practice	45 minutes
Third session	Puzzle	45 minutes
Fourth session	Nique shapes with clay dough	45 minutes
Fifth session	Acrylic painting	45 minutes
Sixth session	The hat that introduced me	45 minutes

while saying our names. These movements can be any movement such as blinking, finger-snapping, head-scratching, turning around, jumping, or putting your hand on your waist. But before we do this, we will say the names of all those before us and repeat their movements. I will start by saying my name and doing a movement. Then your friend next to me will first say my name and repeat the movement I did. Then he will say his name and do another movement. Your next friend will first say my name and do the movement I did. Then he/she will say your second friend's name and do his/her movement, and finally, he/she will say his/her name and we will continue like this. Are we agreed?" Children were encouraged to help each other if they got stuck. In this way, it was ensured that unity within the class was supported, students who had limited communication with each other were brought together, and the researchers and children got to know each other more closely. In the origami activity, questions such as what can be made from paper and what is origami, etc., were asked and the answers were discussed. Sample origami works were shared with the children, and they were asked to design an example they wanted with the given materials or the work they chose to design themselves. Then, those who wanted to color their origami were allowed to do so, and the children were asked to tell a short story about the origami they made. The work was completed after listening to the stories of those who wanted. With the puzzle activity, students were given puzzles suitable for five different age groups. The students were divided into mixed-age groups, and the group that completed the puzzle in the shortest time was chosen as the first. The puzzles were exchanged between the groups to ensure their completion. At the end of the activity, the puzzles were given to the children who wanted to play again at other times. In the activity with clay dough, children were asked to make an original object that they liked and that they could use as an ornamental object in their rooms. All necessary materials were introduced and children were allowed to develop their hand skills first. Children who wanted to make more than one object were given the opportunity. It was also shared with the children that they could add to their objects by using ready-made shapes with clay dough. They were asked to write their names and surnames on their completed objects, and the activity was completed by leaving them in specified places to dry. During the activity, children were asked questions such as what the objects were, why they chose that object, and interacted with them. In the acrylic painting activity, the children were asked to paint the objects made of clay dough in the previous session, and various materials were provided to the children as they wished. Different colors and materials were allowed to be used to create original designs with acrylic paint. After the painting process was completed, all the painted objects were shared with the children by discussing what was painted on the objects, which colors they used and why, and where they planned to use these objects. Finally, in the hat activity that introduced me, a discussion was held with the children about the fact that each of us has unique and different characteristics, and that this makes us special and important. After the discussion, the children were asked to walk around the school garden, and each student was asked to choose an object that represents him/her and put it on his/her hat. They were then asked to decorate/paint their hats as they wished with the given materials. It was reminded that the chosen decorations/paintings should be the ones that reflect themselves in the best way. The activity was

concluded by discussing with the children who completed their hats in turn about the objects they chose and the decorations of their hats.

The game therapy took place in a meeting room at the school. A table arrangement was created for five different groups to increase interaction among children. Students were allowed to be together with different groups in each session. Prior to the activity, the researchers prepared the necessary materials in the meeting room. Only materials to be used in the specified activity were kept in the game therapy room. Students were given the opportunity to purchase materials of their own choosing. During the activity, the goal was shared, materials were introduced, and children's creative ideas were supported. The children were allowed to share the products with their families. In this way, the families shared with the class teachers and the researchers what kind of similar activities they liked and were interested in as an alternative within the scope of indoor play in the future. In each activity, each child was given the opportunity to share his or her feelings and thoughts about the product he or she designed or created.

Dependent/Independent Variables

In the context of the research, game therapy serves as the independent variable, while the total and sub-dimension score averages from the pre-test and post-test scales represent the dependent variables.

Evaluation of the Data

The study data were entered into a computer and analyzed using the Windows IBM SPSS 24.0 (IBM SPSS Corp.; Armonk, NY, USA) statistical software. Descriptive statistics (such as frequency, percentage, mean, and standard deviation) were employed to assess the descriptive data. The Kolmogorov-Smirnov test was utilized to determine the normality of the data distribution, while the Wilcoxon test was applied to analyze the total scores and sub-dimension scores from the scales. A significance level of $\alpha = .05$ was established, corresponding to a 95% confidence interval.

Ethics of Research

Ethical approval for the research was obtained from the Ethics Committee for Non-Interventional Studies of Kocaeli Health and Technology University (dated: March 24, 2023, reference number: 2023-35). Institutional authorization was granted by the Kocaeli Directorate of National Education (dated: December 1, 2023, reference number: E-99332089-605.01-91039350). Permission to use the scales employed in the study was acquired from the author via email. Written informed consent for participation was obtained in writing from both parents and students.

Results

It was found that 51.1% of the students participating in the study were male, 77.8% had their own room at home, and 62.2% owned a tablet. It was determined that 86.7% of the students had Internet at home and 62.2% of them stated that their income level was equal to their expenses. It was found that 28.9% of the mothers and 86.7% of the fathers were working, 53.3% of the mothers determined the time spent playing games, and 71.1% of the students decided on the game to be played. The findings indicated that the students predominantly engaged in sports games (82.2%), intelligence games (68.9%), and fighting games (53.3%),

Table 2.
Some Socio-Demographic Characteristics of the Students (n = 45)

	Intervention Group (n = 23)		Control Group (n = 22)		Total (n = 45)	
	n	%	n	%	n	%
Gender						
Woman	12	52.2	10	45.5	22	48.9
Male	11	47.8	12	54.5	23	51.1
Having one's own room in the house						
Yes	19	82.6	16	72.7	35	77.8
None	4	17.4	6	27.3	10	22.2
Having your own tablet at home						
Yes	12	52.2	16	72.7	28	62.2
None	11	47.8	6	27.3	17	37.8
Availability of Internet at home						
Yes	20	87	19	86.4	39	86.7
None	3	13	3	13.6	6	13.3
Income status						
Income is less than expenses	3	13	7	31.8	10	22.2
Income equals expenses	18	78.3	10	45.5	28	62.2
Income exceeds expenses	2	8.7	5	22.7	7	15.6
Mother's working status						
Working	6	26.1	7	31.8	13	28.9
Not working	17	73.9	15	68.2	32	71.1
Father's working status						
Working	21	91.3	18	81.8	39	86.7
Not working	2	8.7	4	18.2	6	13.3
Types of games played*						
Mind games	20	87	11	50	31	68.9
Profession games	17	73.9	3	13.6	20	44.4
Sports games	23	100	14	63.6	37	82.2
Racing games	8	34.8	10	45.5	18	40
Cartoon character games	8	34.8	8	36.4	16	35.6
Skill games	12	52.2	7	31.8	19	42.4
Fighting games	10	43.5	14	63.6	24	53.3
Who decides the amount of time played?						
Myself	7	30.4	10	45.5	17	37.8
Mother	14	60.9	10	45.5	24	53.3
Father	1	4.3	0	0	1	2.2
Sister/brother	1	4.3	2	9.1	3	6.7
Who decides the game played?						
Myself	17	73.9	15	68.2	32	71.1
Mother	5	21.7	3	13.6	8	17.8
Father	1	4.3	4	18.2	5	11.1
At what time are games played the most?						
09:00-11:00	3	13	4	18.2	7	15.6
11:00-14:00	9	39.1	5	22.7	14	31.1
14:00-17:00	7	30.4	10	45.5	17	37.8
17:00-20:00	4	17.4	3	13.6	7	15.6
How many hours a day do you play games?	X ⁻ ± SS = 2.91 ± 1.4 (Min:1 - Max:8)		X ⁻ ± SS = 3.27 ± 1.8 (Min:1 - Max:9)		X ⁻ ± SS = 3.09 ± 1.6 (Min:1 - Max:9)	
How many hours a week do you play games?	X ⁻ ± SS = 20.39 ± 9.8 (Min:7 - Max:72)		X ⁻ ± SS = 23.68 ± 14.4 (Min:7 - Max:72)		X ⁻ ± SS = 22 ± 12.3 (Min:7 - Max:72)	

*Children gave more than one answer.

Table 3.
Distribution of Students' Responses to the Computer Game Addiction Scale (n = 45)

	Pre-Test					Post-Test				
	Can't Quit the Game	Relating the Game to Life	Disrupting Tasks Due to Gaming	Preferring Gaming Over Other Activities	Scale Total	Can't Quit the Game	Relating the Game to Life	Disrupting Tasks Due to Gaming	Preferring Gaming Over Activities	Scale Total
	X ⁻ ± SS	X ⁻ ± SS	X ⁻ ± SS	X ⁻ ± SS	X ⁻ ± SS	X ⁻ ± SS	X ⁻ ± SS	X ⁻ ± SS	X ⁻ ± SS	X ⁻ ± SS
Intervention Group (n = 23)	21.95 ± 8.87	8.43 ± 3.34	4.91 ± 2.59	11.56 ± 3.65	46.86 ± 14.03	20.30 ± 8.36	5.86 ± 3.69	3.69 ± 1.66	5.39 ± 2.42	35.30 ± 14.17
<i>p</i> / <i>W</i> **					0.006 / -2.723					
Control Group (n = 22)	23.22 ± 11.64	8.04 ± 3.72	4.5 ± 1.97	8.95 ± 5.13	44.72 ± 19.89	26.04 ± 8.12	8.13 ± 4.02	4.40 ± 2.61	8.54 ± 4.58	47.13 ± 16.77
<i>p</i> / <i>W</i> **					0.614 / -0.504					

**p* < .05, **Kruskal-Wallis test.

Table 4.
Distribution of Students' Responses to the Loneliness Scale (n = 45)

	Pre-Test X ⁻ ± SS	Post-Test X ⁻ ± SS	<i>p</i> / <i>W</i> **
Intervention group (n = 23)	75.30 ± 5.23	71.52 ± 7.91	0.041* / -2.040
Control group (n = 22)	75.81 ± 6.91	72.95 ± 55.77	0.101 / -1.641

**p* < .05, **Kruskal-Wallis test.

respectively. Additionally, the majority of students played games on the computer primarily between 14:00 and 17:00 (37.8%). The students reported an average of 3.09 ± 1.6 hours per day and 22 ± 12.3 hours per week spent playing games (Table 2).

The mean total score for computer game addiction among students in the intervention group was 46.86 ± 14.03 before the intervention and decreased to 35.30 ± 14.17 after the intervention, with a statistically significant difference observed between pre-test and post-test scores (*p* = .006). The students demonstrated reduced scores in all sub-dimensions of computer game addiction in the post-test compared to the pre-test, with the most notable reduction in the sub-dimension related to preferring games over other activities. In contrast, the control group's average total score for computer game addiction increased from 44.72 ± 19.89 to 47.13 ± 16.77 post-intervention (*p* = .614). The control group showed a decrease only in the sub-dimension of preferring games over other activities, while their scores increased in other sub-dimensions from pre-test to post-test (Table 3).

The mean total score for students in the intervention group was 75.30 ± 5.23 in the pre-test and 71.52 ± 7.91 in the post-test, and this difference between the mean total scores on the loneliness scale was statistically significant (*p* = .041). The mean score of the students in the control group was 75.81 ± 6.91 in the pre-test and 72.95 ± 55.77 in the post-test, but there was no statistically no significant difference between the pre-test and post-test (*p* = .101) (Table 4).

In this study, the Child Computer Game Addiction Scale's Cronbach's alpha value was .90. The subdimensions are as follows: Inability to quit the game is .88, Associating the game with life is .60, Disrupting tasks due to the game is .67, and Preferring the game to other activities is .72. The Loneliness Scale for Children's alpha value was .69 (Table 5).

Table 5.
The Reliability of the Scales and Sub-Scales

Scales-Sub-Scales	Cronbach Alpha
Child Computer Game Addiction Scale	.90
Inability to quit the game	.88
Associating the game with life	.60
Disrupting tasks due to the game	.67
Preferring the game to other activities	.72
Loneliness Scale for Children	.69

Discussion

This study aimed to evaluate the impact of game therapy on computer game addiction and loneliness in children. The findings indicate that, following the intervention, the post-test scores for computer game addiction among children in the intervention group decreased significantly, with reductions observed across all sub-dimensions of computer game addiction. In the literature, there are limited studies investigating the effect of game therapy on computer game addiction (Soltani & Farhadi, 2021). Soltani and Farhadi (2021) found that play therapy applied by parents to their preschool children reduced computer game addiction. When other studies on computer game addiction in the literature are examined, a study conducted by Söylemez and Ayas (2023), it was found that game addiction decreased immediately after the cognitive behavioral game therapy-based psychoeducation program and at the third-month follow-up. In another study, it was determined that the use of motivational interviewing techniques reduced computer game addiction (Özcan & Çelik, 2021). The findings obtained in this study are similar to the results of different initiatives in the literature. Today, children have easy access to computer games, which may lead to uncontrolled computer game playing. Therefore, computer game addiction has become widespread. These addictions may cause children to waste time, negatively affect academic achievement, and compromise social time activities (Tuncer Şener & Yorulmaz, 2023). It can be said that game therapy is an effective method to reduce computer game addiction in primary school children.

The loneliness levels of the students in the intervention group decreased after game therapy. This finding is similar to studies in the literature (Amini et al., 2016; Kaboodi, 2023). It is stated that children feeling lonely can increase addiction to computer games (Genç et al., 2018). In addition, it has been determined that as computer game addiction increases, children's loneliness levels also increase (Kavlak et al., 2022). Therefore, loneliness and computer game addiction mutually affect each other. Game therapy can be considered an effective method to avoid the negative consequences of game addiction and loneliness in children.

Limitations and Directions for Future Study

This study is limited to children studying in a primary school affiliated to the Provincial Ministry of National Education in Kocaeli province. Game therapy sessions can be enhanced by increasing the number of sessions and diversifying their content in ways that children can be interested, fun and contribute to social and mental development for children. Implementing the intervention after randomization based on children's computer game addiction scale scores will increase the level of evidence of the study. A follow-up test can be applied to measure the effectiveness of game therapy. In order to ensure more consistent statistical values in future studies, the number of participants in the intervention and control groups should be over 30. Item-level analyses can be conducted in future research to improve comprehensiveness and distinctiveness.

Data Availability Statement: The data that support the findings of this study are available upon request from the corresponding author.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Kocaeli Health and Technology University (Date: March 24, 2023, Approval No: 2023-35).

Informed Consent: Written informed consent was obtained from students and parents of the students who agreed to take part in the study.

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Geniřletilmiř Özet

İlkokulda Öđrenim Gören Öđrencilere Uygulanan Oyun Terapisinin Bilgisayar Oyunu Bađımlılıđı ve Yalnızlıđa Etkisi

Giriř ve Amaç

Oyun bađımlılıđı, kompulsif veya kontrol edilemeyen bađımlılıđın psikolojik durumu özellikle ergenler ve çocuklar arasında yaygın görölmekte ve ciddi sorunlara neden olmaktadır. Yalnızlık, Perlman ve Peplau (1981) tarafından, bir bireyin halihazırda var olan sosyal iliřkisi ile içinde olmak istediđi sosyal iliřkisi arasındaki farkın fark edilmesi durumunda ortaya çıkan hoř olmayan bir ruhsal durum olarak tanımlanmaktadır. 9-10 yař arası çocuklar bu dönemde sosyalleřmeye başlamaktadır. Bu dönem aynı zamanda onların öđrenmeye ve okul başarısına önem verdikleri dönemdir. Oyun, yařamın en dođal yanını oluřturan bir etkinliktir. Çocuklar için temel yařam gereksinimleri kadar önemli olan oyun, beyinde sinapsların geliřimine yardımcı olarak nöron kaybını engeller. Oyun terapisi ise eđitimi oyun terapistlerince uygulanan, çocukların psikososyal sorunlarının çözümlenmesi, sosyalleřmesi ve geliřim düzeyini artırmayı hedefleyen bir yöntemdir. Çocuklar, yetiřkinler gibi problem üzerine konuřmak istemezler; oyun aracılıđıyla dođaçlama řekilde kendilerini ifade ederler. Oyun terapisinin, çocukların kendilerini ifade etmelerine, sorunlarını ortaya çıkarmalarına ve duygularını ortaya çıkarmalarına yardımcı olmada etkili olduđu tespit edilmiřtir. Bu çalıřmanın amacı, Kocaeli ilinde bir ilkokula devam eden çocuklara uygulanan oyun terapisinin bilgisayar oyunu bađımlılıđı ve yalnızlık üzerindeki etkisini incelemektir.

Yöntem

Bu arařtırma ön test-son test yarı deneysel desende olup, Kocaeli'de İl Milli Eđitim Bakanlığı'na bađlı belirlenen bir ilkokulda yürütölmüřtür. Arařtırmanın evrenini 9-10 yař grubu öđrenciler (4. sınıf öđrencilerinin 4 řubesi) oluřturmaktadır. Arařtırmanın verileri 'Çocuklar için Yalnızlık Ölçeđi', 'Çocuklar için Bilgisayar Oyun Bađımlılıđı Ölçeđi', ve Sosyo-Demografik Form ile toplanmıřtır. Arařtırmanın ön test verileri alındıktan sonra, bilgisayar oyunu bađımlılıđı en yüksek iki řube giriřim grubuna (n=23), diđer iki řube ise kontrol grubuna (n=22) alınmıřtır. Veriler, yüz yüze Aralık 2023 Ocak 2024 tarihleri arasında toplanmıřtır. Verilerin analizinde Windows IBM SPSS 24.0 istatistik programı kullanılmıřtır. Tanımlayıcı verilerin analizinde (sayı, ortalama, yüzde, standart sapma vb.) tanımlayıcı istatistikler kullanılmıřtır. Verilerin normal dađılıma uygun olup olmadıđı Kolmogorov-Smirnov testi ile incelenmiř, ölçek toplam ve alt boyut toplam puanları ise Wilcoxon testi ile deđerlendirilmiřtir. Anlamlılık düzeyi %95 güven aralıđında $\alpha=0.05$ olarak kabul edilmiřtir.

Bulgular

Bu arařtırmada, öđrencilerin %51,1'inin erkek olduđu, %77,8'inin evinde kendine ait odasının olduđu ve %62,2'sinin tabletinin olduđu belirlendi. Öđrencilerin %86,7'sinin evinde internet olduđu ve %62,2'sinin ise gelirlerinin giderlerine eřit olduđunu belirttikleri belirlendi. Annelerin %28,9'unun, babaların ise %86,7'sinin çalıřtıđı, annelerin %53,3'ünün oyun oynayarak geçirdiđi zamanı belirlediđi ve öđrencilerin %71,1'inin oynanacak oyuna karar verdiđi belirlendi. Öđrencilerin en çok sırasıyla spor oyunları (%82,2), zeka oyunları (%68,9) ve dövüř oyunları (%53,3) oynadıkları, en çok 14:00-17:00 (%37,8) saatleri arasında bilgisayarda oyun oynadıkları belirlendi. Öđrenciler, günde ortalama $3,09 \pm 1,6$ saat, haftada ise $22 \pm 12,3$ saat oyun oynadıklarını belirtmiřlerdir.

Giriřim grubundaki öđrencilerin bilgisayar oyunu bađımlılıđı toplam puan ortalaması $46,86 \pm 14,03$ iken müdahale sonrası $35,30 \pm 14,17$ puan olduđu bulunmuř olup, bu fark istatistiksel düzeyde anlamlıdır ($p = .006$). Öđrencilerin bilgisayar oyunu bađımlılıđının tüm alt boyutlarında son test puanları ön teste göre daha düşük puanlar aldıkları belirlenirken, en çok oyunu tercih etme alt boyutunda azalma olduđu saptanmıřtır. Kontrol grubundaki öđrencilerin bilgisayar oyunu bađımlılıđı toplam puan ortalaması $44,72 \pm 19,89$ iken uygulama sonrasında $47,13 \pm 16,77$ puan olarak belirlenmiřtir ($p = .614$). Yalnızlık ölçeđi toplam puan ortalamaları karřılařtırmalarında giriřim grubundaki öđrencilerin ön test toplam puan ortalaması $75,30 \pm 5,23$, son test ise $71,52 \pm 7,91$ olup, arasındaki bu fark istatistiksel olarak anlamlıdır ($p = .041$). Kontrol grubunda yer alan öđrencilerin ölçek ön test puan ortalaması $75,81 \pm 6,91$ ve ölçek son test puan ortalaması $72,95 \pm 55,77$ olmasına rađmen bu fark istatistiksel olarak anlamlı deđildir ($p = .101$).

Tartıřma

Literatürde, oyun terapisinin bilgisayar oyunu bađımlılıđına etkisini arařtıran sınırlı sayıda çalıřma bulunmaktadır. Ebeveynlerin okul öncesi çocuklarına uyguladıkları oyun terapisinin bilgisayar oyunu bađımlılıđını azalttıđı bulunmuřtur. Literatürde bilgisayar oyunu bađımlılıđı ile ilgili diđer çalıřmalar incelendiđinde; biliřsel davranıřçı oyun terapisi temelli psikoeđitim programının hemen ardından ve 3. ay takibinde oyun bađımlılıđının azaldıđı, bařka bir çalıřmada ise motivasyonel görüřme tekniklerinin kullanımının bilgisayar oyunu bađımlılıđını azalttıđı saptanmıřtır. Bu çalıřmada elde edilen bulgular literatürdeki farklı giriřimlerin sonuçlarıyla benzerlik göstermektedir. Giriřim grubundaki öđrencilerin yalnızlık düzeyleri oyun terapisi sonrasında anlamlı düzeyde azalmıřtır. Bu bulgu literatürdeki çalıřmalarla benzerlik göstermektedir. Literatürde yapılan çalıřmalar, kendini yalnız hisseden çocukların bilgisayar oyunu bađımlılıđı düzeylerinin artabileceđini ifade edilmektedir. Ayrıca bilgisayar oyunu bađımlılıđı arttıđıça çocukların yalnızlık düzeylerinin de arttıđı tespit edilmiřtir. Dolayısıyla, yalnızlık ve bilgisayar oyunu bađımlılıđı birbirini karřılıklı olarak etkilemektedir. Oyun terapisinin, çocuklarda oyun bađımlılıđı ve yalnızlıđın olumsuz sonuçlarından korunmak için etkili bir yöntem olarak deđerlendirilebileceđi düşünölmektedir.