INVESTIGATION OF THE RELATIONSHIP BETWEEN DIGITAL GAME ADDICTION AND PHYSICAL ACTIVITY LEVELS OF SECONDARY SCHOOL STUDENTS

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ABSTRACT

Introduction and Aim: The game, which is as old as human history, has undergone many changes from past to present. The shape and content of the games played together with the developing technology have also changed. The most obvious example of this is digital games, especially since the beginning of the 1980s. At the beginning of the most fundamental criticisms of digital games, which are judged by many different points of view, the structure of these games is to bring the individuals who play the necessary role to a still and passive position. The purpose of this research; Is to examine the level of digital game addiction and physical activity of middle school students in terms of various variables. **Method:** In the research designed according to the quantitative research model, relational screening was used. A total of 330 participants, 149 female and 181 male, were included in the study. In the study, "Digital Play Dependency Scale for Children" and "Cognitive Behavioral Physical Activity Scale" were used. Descriptive statistics, t-Test, ANOVA and Correlation analyzes were performed using SPSS 23 package program. **Findings:** According to the results of the research; Participants' levels of digital game addiction differ significantly in terms of "gender, age, regular sport, daily average playing time".The physical activity levels of the participants show significant differences according to the variables of "daily regular sports training, father education level".Participants were found to have a negative and significant relationship between total scores for "digital game addiction" and "physical activity levels". **Results:** As a result; It can be said that physical activity-sport can be an important tool in solving the problem of digital play addiction, which is a kind of virtual addiction of the individuals.

Key Words: Game, digital game, addiction, physical activity, sport.

ORTAOKUL ÖĞRENCİLERİNİN DİJİTAL OYUN BAĞIMLILIĞI VE FİZİKSEL AKTİVİTE DÜZEYLERİ ARASINDAKİ İLŞKİNİN İNCELENMESİ

ÖZ

Giriş ve Amaç: İnsanlık tarihi kadar eski olan oyun, geçmişten günümüze birçok değişikliğe uğramıştır. Gelişen teknoloji ile birlikte oynanan oyunların şekli ve içeriği de değişime uğramıştır. Bunun en belirgin örneği ise özellikle 1980'lerin başından itibaren hayatımıza giren dijital oyunlardır. Birçok farklı bakış açısı ile değerlendirilen dijital oyunlara getirilen en temel eleştirilerin başında, bu oyunların yapısı gereği oynayan bireyleri hareketsiz ve pasif bir duruma getirmesidir. Bu araştırmanın amacı; ortaokul öğrencilerinin dijital oyun bağımlılığı ve fiziksel aktivite düzeylerinin çeşitli değişkenler açısından incelenmesidir. **Yöntem:** Nicel araştırma modeline göre tasarlanan araştırmada, ilişkisel tarama yönteminden yararlanılmıştır. Araştırmada 149 kadın, 181 erkek olmak üzere toplam 330 katılımcı yer almıştır. Katılımcılara "Çocuklar İçin Dijital Oyun Bağımlılığı Ölçeği" ile "Bilişsel Davranışçı Fiziksel Aktivite Ölçeği" uygulanmış ve elde edilen veriler SPSS 23. Paket program kullanılarak Tanımlayıcı istatistik, t-Testi, ANOVA ve Korelasyon analizleri yapılmıştır. **Bulgular:** Araştırma sonuçlarına göre; katılımcıların dijital oyun bağımlılığı düzeyleri "cinsiyet, yaş, düzenli olarak spor yapma, günlük ortalama dijital oyun oynama süresi" değişkenleri açısından anlamlı olarak farklılıklar göstermektedir. Katılımcıların fiziksel aktivite düzeyleri ise "günlük düzenli olarak spor yapma, baba eğitim düzeyi" değişkenlerine göre anlamlı farklılıklar göstermektedir. Katılımcıların "dijital oyun bağımlılığı" ve "fiziksel aktivite düzeylerine" ilişkin toplam puanları arasında ise negatif yönde ve anlamlı düzeyde ilişki olduğu görülmüştür. **Sonuç:** Sonuç olarak; bireylerin sanal bir bağımlılık türü olan dijital oyun bağımlılığı sorununun çözümünde, fiziksel aktivitenin-sporun önemli bir araç olabileceği söylenebilir.

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Anahtar kelimeler: Oyun, dijital oyun, bağımlılık, fiziksel aktivite, spor.

INTRODUCTUON

It is an undeniable fact that developing technology provides many practices in human life and mankind has shaped many basic life activities from education to health, to transportation and entertainment. However, games, one of these basic life activities, received the same share of this change. The gaming behavior that started when humans imitated some nature events gained a distinct dimension with imaginary games (digital games) played with special computer software and game tools. It is also a fact known that this technology that develops brings along with the practices that it brings to human life, it has some negative consequences with it. One of the most important of these problems is technology addiction. One of the most prominent titles is the concept of "computer addiction" and the concept of "digital game addiction" which is evaluated under this title.[20]

The rapid rise of information technology has greatly accelerated the increase in users. Especially the majority of young people spend their time in front of computers.[43] Researchers stated that the computer world underwent many changes in everyday life practices by infecting people of all ages, especially in the age of playful children, and the beginning of these changes came to the concept of "digital game".[42,11] Electronic games have become a very popular leisure tool among children and adolescents.[37]

There is much debate about whether digital games are beneficial or harmful for children. Part of the researchers argue that digital games improve strategic thinking, problem solving, fast and accurate decision-making and hand-eye coordination, especially online games that contribute to socializing and facilitate learning of technology use. On the other hand, these games push individuals to a passive lifestyle, detach from social life, negatively affect communication in the family, keep sitting for hours at the table due to the way of play, cause many negative physiological effects such as endurance circulation, respiration, muscle and skeletal systems, content games make individuals tend to be more prone to violence and the most important is to turn those who play these games into game addicts.[38,16,33,27,40,]

The game addiction, which is defined as incompatible and stubborn behavior related to playing video games, is considered as a kind of technology addiction and is also evaluated in the sub-category of internet addiction.[17] Despite many studies on digital game addiction, researchers have not reached a consensus on this concept. Researchers consider extreme computer use and playing video games as a behavioral addiction. Behavioral addiction is defined as an excessive, compelling, uncontrollable physical and psychological condition. We can define game addiction as a behavior addiction by this way of definition.[32]

Surveys have shown that gambling, shopping, sports, cyber sex and technology are addictive in the brain besides alcohol and tobacco addiction.[41] Behavioral addictions also show signs of physical and psychological addiction (mental occupation, emotional state variability, tolerance, withdrawal, interpersonal conflict and recurrence), which are the main components of addiction as well as alcohol-substance addiction.[4]

Lemmens et al. (2009) evaluated game addiction under seven criteria based on the addiction criteria in DSM IV. These criteria are;

1) Salience: Playing a game becomes the most important activity in a person's life and dominates his or her thinking

(preoccupation), feelings (cravings), and behavior (excessive use).

2) Tolerance: The process whereby someone starts playing games more often, thereby gradually building up the amount of time spent on games.

3) Mood modification: The subjective experiences that people report as a result of engagement in games. This dimension was previously labeled euphoria, referring to a ‘‘buzz’’ or ‘‘high’’ that is derived from an activity. However, mood modification may also include tranquillizing and/or relaxing feelings related to escapism.

4) Withdrawal: Unpleasant emotions and/or physical effects that occur when game play is suddenly reduced or discontinued. Withdrawal consists mostly of moodiness and irritability, but may also include physiological symptoms, such as shaking.

5) Relapse: The tendency to repeatedly revert to earlier patterns of game play. Excessive playing patterns are quickly restored after periods of abstinence or control.

6) Conflict: This refers to all interpersonal conflicts resulting from excessive gaming. Conflicts exist between the player and those around him/her. Conflicts may include arguments and neglect, but also lies and deception.

7) Problems: This refers to problems caused by excessive game play. It mainly concerns displacement problems as the object of addiction takes preference over activities, such as school, work, and socializing. Problems may also arise within the individual, such as intrapsychic conflict and subjective feelings of loss of control.[32]

Digital game addiction, which is a current and important problem, causes the problems of children especially in terms of individual and social life. It is very important for children to be physically active in order to be healthy from their cognitive, physical, social and emotional aspects. As a result of the rapid and crooked urbanization, the open playgrounds that are especially needed in the cities are gradually disappearing and the children are confined to narrow and closed spaces and the need to play games in restricted environments is eliminated. However, this does not meet the needs and is an important factor for children to move to more passive games such as digital games. The fact that the developing and cheaper technology (computer-based gaming tools) are easily accessible and that there is no conscious awareness of its use, causes this technology to arrive at a point where a disadvantageous result will arise instead of the expected benefit. As a result, the number of "digital game addicts" who are adopting a passive lifestyle, experiencing health problems such as obesity, weak social relationships, low self-esteem, individual and social needs and duties are increasing day by day.

The human body is in need of constant movement due to its innate traits.[44] The movement is very important for the physical development of a child. Participation in physical activity during childhood has some positive effects.[9] Health related research; children with higher activity levels may be less affected by high blood pressure, diabetes, cancer, obesity and cardiovascular disease in later ages.[18] Baranovski et al. (2009) report that the number of individuals with young obesity problems is increasing day by day, and that the reasons for this are unhealthy nutrition and inadequate physical activity.[5] Cengiz and İnce (2013) emphasize that changing living conditions, environmental, social factors and technology negatively affect the physical activity levels of school age students.[8]

The World Health Organization (WHO) states that obesity is a widespread problem throughout the world and that this problem has spread rapidly among children and adolescents. One of the most important reasons for this is the excessive level of watching TV and playing digital

games, which are regarded as environmental factors, resulting in a decrease in physical activity.[35] Kudas et al. (2005) stated that while children expressed excessive levels of television watching about the increase in sedentary activities, Loprinzi and Cardinal (2011) stated that long-time occupations with technology-based means such as computers and video games could be examples of sedentary behaviors.[31,34] According to Paspastergiou (2009), there are scientific researches on long-term and uncontrolled digital game play leading to mental and physical disadvantages. According to the results of these researches, it is found out that extreme digital game play pushes individuals to aggressive behavior, causing excessive weight and obesity as a cause of consumption.[37]

This research is particularly important for the investigation of the relationship between childhood and adolescence individuals' digital play addiction and physical activity levels constituting the risk group, the solution of living problems to the scientists who constitute the problem parties, parents, educators and individuals with the most important problem.

METHOD

Research; was designed according to the quantitative research model and relational research method was used. The research method examining associations and links is often called relational research. Correlational and causal comparison methods are the main examples of relational research.[7]

Depending on the purpose of the research, the group universe that all the individuals (units) that can be investigated or generalized is called the universe.[12] In this context, the universe of the researchers constitutes 13-15 age group students studying at central secondary schools affiliated to Uşak Provincial Directorate of National Education.

In this research, purpose sampling methods have been used to make use of the "analogous sampling" method. Simulated sampling method; an analogous subgroup of the problem of researching in the environment defines the choice of the situation to be done here.[7] In this context, the sample of the researcher; Uşak Provincial Directorate of National Education Nihat Dülgeroğlu At the secondary school, there are totally 330 students, 149 female and 181 male students studying in 2016-2017 education period.

Data Collection Tools

In the research, "Personal Information Form", "Digital Game Addiction Scale for Children" developed by Hazar and Hazar in 2016 and developed by Schembre et al. In 2015 and developed by Eskiler et al. "Cognitive Behavioral Physical Activity Scale" which was adapted to Turkish in 2016 was used.

Personal Information Form: A literature search was made on what the independent variables considered to be related to digital game addiction and physical activity were, and a 6-item personal information form was created for the variables that could be related and the participant's age, gender, parental education level, the duration of the game and the average duration of the sport.

Digital PlayAddiction Scale for Children: The Hazar and Hazar scale of the 10-14 age group was developed in 2016 to determine the level of digital game addiction in children.[19] The developed scale consists of 24 items with four sub-factors. A 5-point Likert-type scale was used to evaluate the expressions in the measure (1 = Never, ..., 5 = Completely agree). Factors; Excessive Focus and Conflict on Playing Digital Game, Tolerance Development in Game Play and Value Added to Game, Postponement of Individual and Social Duties / Assignments, Psychological-Physiological Reflection of Dysnity and Diving in Game.

The total variance ratio explained by the scale is 47.95%. For the whole scale, Croanbach Alpha is .90, while the first subscale is .78, the second is .81, the third is .76, and the fourth is .67.

Cognitive Behavioral Physical Activity Scale: Schembre et al. Developed in 2015 and by Eskiler et al. scale adapted to the Turkic in 2016; Result Expectation, Self Regulation, Personal Handler. All expressions in the scale are scored with a 5-point Likert Type rating such as "1 = Absolutely not, ..., 5 = Absolutely agree". The total variance ratio explained by the scale is 54.12%. Total Cronbach Alpha α = .84 for the scale and values for the sub-dimensions are in the form of Result Expectation = .85 Self Regulation = .79 and Personal Engeller = .64.[13]

Data Collection and Analysis

During the collection of data; 350 student measurement instruments that voluntarily participated in the survey were applied and 20 of the completed scales were not assessed on the grounds that they did not fit the validity and reliability of the study. The obtained data were evaluated in SPSS 20 package program and subjected to descriptive statistics, t-Test, one way variance analysis (ANOVA), Post-Hoc test statistics (Tukey HSD) and Pearson Correlation analyzes.

FİNDİNGS

The analyzes and results of the data obtained in this part of the study are included.

Table 1. Descriptive Statistics of Working Group

	Variable	f	%
Gender	Female	149	45.2
	Male	181	54.8
Mother education level	Primary school	75	22.7
	Middle School	96	29.1
	High school	116	35.2
	University	43	13.0
Father education level	Primary school	34	10.3
	Middle school	90	27.3
	High school	129	39.1
	Universty	77	23.3
		330	**%100**

	N	$\bar{X}$	Sd
Digital playing time	330	1.85 (1-2 hours)	1.26
Daily sports time	330	1.03 (1-2 hours)	1.04

Table 2. Results of t-test on Gender Variable

Total Test Score	Gender	N	$\bar{X}$	Sd	t	p
Digital Game Addiction	Female	149	42.42	15.52	-4.71	.00
	Male	181	51.26	18.49		
Physical Activity Level	Female	149	53.68	10.29	-.62	.53
	Male	181	54.38	9.77		

When participants' total scores on digital game addiction were examined; it is seen that the average score of male students is higher than female students and this difference is statistically significant. When the average of total scores of physical activity levels is examined, it is seen that there is a difference in favor of male students but this difference is not statistically significant.

Table 3. T-test Results Regularly Regarding Sporting Variable

Total Test Score	Regularly Sports	N	$\bar{X}$	Sd	t	p
Digital Game Addiction	Yes	187	45.64	16.60	-1.91	.04
	No	143	49.40	18.98		
Physical Activity Level	Yes	187	57.80	9.49	8.56	.00
	No	143	49.18	8.44		

When Table 3 is examined, it is seen that the participants' digital game addiction total score average is favorable to the students who do not regularly play sports and this difference is statistically significant. When the average of total scores of physical activity levels are examined, it is seen that there is a difference in favor of those who regularly exercise and this difference is statistically significant.

Table 4. Results of t-test on Age Variance

Total Test Score	Age	N	$\bar{X}$	Sd	t	p
Digital Game Addiction	13	163	43.86	15.31	-3.51	.00
	14	167	50.60	19.30		
Physical Activity Level	13	163	55.09	10.28	1.84	.06
	14	167	53.06	9.64		

When Table 4 is examined, it is seen that the participant's digital game addiction total score average is favored by the students in the age group of 14 years and this difference is statistically significant. When the average of the total scores of the physical activity levels is examined, it is seen that the difference of the points among the age groups is not statistically significant.

Table 5. ANOVA Results According to the Daily Average Digital Playing Time

Total Test Score	Game Time	Source of Variance	Sum of Squares	df	MeanSquare	F	p	Significant Differences
Digital Game Addiction	1	Between Groups	19382.16	5	3876.43	14.91	.00	1-2*
	2							1-3*
	3							1-4*
	4	Within Group	84225.74	324	259.95			1-5*
	5+							2-5*
Physical Activity Level	1	Between Groups	831.05	5	166.21	1.67	.13	-
	2							
	3							
	4	Within Group	32101.48	324	99.07			
	5+							

As a result of the analyzes made; It was determined that the total score of "physical activity level" did not show a statistically significant difference (F = 1.67, p = 0.13> 0.05) according to the variable "daily average digital playing time". The statistical significance of "digital game addiction" was found to be statistically significant (F = 14.91, p = 0.00 <0,01). Post-hoc test statistics

(Tukey HSD) were used to determine the source of significant differences between the groups as a result of this analysis. Groups with favorable score difference / high level of digital game dependency (*) are shown. The participants who played the digital game for 1 hour per day had a digital game addiction score average (41,25), while the daily average of 2 hours played (49,03), 3 hours played (57,31), 4 hours played (58,89) and 5 hours and above (67.00) were found to be statistically significant. Similarly, it was determined that the difference between the average score of the participants who played digital game for 2 hours per day (49,03) and the total score of those who played 5 hours or more (67,00) showed a statistically significant difference.

Table 6. Results of ANOVA on Mother Education Level Variable

Total Test Score	Education Level	Source of Variance	Sum of Squares	df	MeanSquare	F	p
Digital Game Addiction	Primary School Middle School High School Universty	Between Groups	468.27	3	156.09	.49	.68
		Within Group	103139.63	326	316.37		
Physical Activity Level	Primary School Middle School High School Universty	Between Groups	165.12	3	55.04	.54	.65
		Within Group	32767.41	326	100.51		

As a result of the analyzes made; it was found that there was no statistically significant difference in the total scores of "Digital game addiction and physical activity level" according to the variables of "Mother's education level".

Table 7. Results of ANOVA on the Variance of the Father's Education Level

Total Test Score	Education Level	Source of Variance	Sum of Squares	df	MeanSquare	F	p	Significant Differences
Digital Game Addiction	1-PrimarySchool 2- Middle School 3- High School 4- Universty	Between Groups	1386.35	3	462.11	1.47	.22	-
		Within Group	102221.55	326	313.56			
Physical Activity Level	1-PrimarySchool 2- Middle School 3- High School 4- Universty	Between Groups	1350.52	3	450.17	4.64	.00	4*-1 4*-2 4*-3
		Within Group	31582.00	326	96.87			

As a result of the analyzes made; it was determined that the total score of "Digital game addiction" did not show any statistically significant difference (F = 1,47; p = 0,22> 0,05). Physical activity level "total score was statistically significant (F = 4.64, p = 0.00 <0.01). Post-hoc test statistics (Tukey HSD) were used to determine the source of significant differences between the groups as a result of this analysis. Groups with favorable score difference / high level of physical activity (*) are shown. While the average level of the father education level was of universty 57.5, the average primary school graduate (51,50), middle school graduate (52,74) and high school graduate (53,58) were found.

Table 8. Correlation Results of Digital Game Addiction and Physical Activity Level Total Score

Digital Game Addiction Scale	Cognitive Behavioral Physical Activity Scale		
	1. Sub-Factor	2. Sub-Factor	3. Sub-Factor
1. Sub-Factor	-.26**	-.20**	-.20**
2. Sub-Factor	-.15**	-.19**	-.20**
3. Sub-Factor	-.24**	-.21**	-.27**
4. Sub-Factor	-.22**	-.17**	-.15**
			Total Score
Total Score			-.35**

** p <0.01

When Table 8 is examined; Participants' scores on the Digital Game Addiction Scale for Children and the Cognitive Behavioral Physical Activity Scale showed a high level of negative correlation with both scale subscales and scale scores.

Table 9. Participants' Physical Activity Levels According to Digital Play Dependency Levels

		Physical Activity Level			
		N	$\bar{X}$	Sd	%
Digital Game Addiction Level	1-24 Points range Normal Group	14	62.07	7.62	4.2
	25-48 Points range Low Risk Group	191	55.57	9.41	57.9
	49-72 Points range Risky Group	94	52.54	10.21	28.5
	73-96 Point range Dependent Group	25	45.80	7.16	7.6
	97-120 points range High Level Dependent Group	6	48.83	11.42	1.8

When Table 9 is examined; it is observed that the level of physical activity of the students decreases gradually as the level of digital game addiction increases.

DISCUSSION and CONCLUSION

In the research findings; it is seen that the male students' total score average of digital game addiction (51,26) is higher than female students (42,42) and this difference is statistically significant (t = -4,71; p =, 00 <0,01) . As the main source of this difference, it can be shown that the main target mass of many digital games produced is formed by male individuals and the game contents are designed accordingly, and as a result, the male individuals play these games more intensely. On the other hand, it may be effective for male individuals to be more active in social life compared to female individuals, and male individuals to be able to go to areas such as game rooms more easily due to the culture of society in order to gain access to these games. Horzum (2011) concluded that the addiction level of male students was significantly higher than that of female students in the study titled "Examination of computer game dependency levels of primary school students according to various variables" and researcher concluded that computer games are more male games and internet cafes are more the possibility that boys can go on are among the reasons for these outcomes.[21] Similar research results appear to take place quite frequently in the field, and

similar expressions are used as the main reason for this difference.[11,1,30,23] When the average scores of the physical activity levels were examined, it was found that there was a difference between male students (Male = 54.38 / Female = 53.68), but this difference (t = -, 62; p =.53>0,05) . The main reason for this is that the living spaces of the students and their daily life activities are similar. It can be shown as evidence that the daily average sporting hours of participants other than physical education classes vary between about 1-2 hours in terms of both male and female participants. Kudas et al. (2005) found that the results of the research on "Physical Activity and Some Nutritional Habits of the 11-12 age group of Ankara Province" reached to the findings and that male students had higher levels of physical activity during free time and school hours than female students and this result was statistically significant. The researchers explained the reason for this result as female students prefering more sedanter activities than male students.[31]

According to findings; (49,40) of the students who did not regularly play sports (49,40) were found to be higher than those who did it (45,64), and this difference was found to be statistically significant (t = -1,91; p = 04 <.05). As one of the main reasons for this result, it can be explained that the tendency of children to use more and more technological gaming tools day by day increases and the result is to move away from games with physical activity content. Horzum, Ayas and Çakır-Balta (2008), with the development of the technology today, especially in the closed and virtual environments with the computer and the internet, while the games are interacting with the children in the areas not covered in the past (playgrounds, streets etc.).[22] The Postman notes that children's games that we used to see on the streets are now out of the question, and that even children's games are erased from minds.[29] According to Kaya (2013), human life has become virtual in many areas, and one of these areas is games. Today, instead of playing on the streets or on the sporting grounds, children play with their friends at home, in internet cafes or play-station halls.[28] On the other hand, when the average of total scores of the participants' physical activity levels were examined, it was found that the average (57,80) of the students who regularly played sports was higher than those who did not (49,18) and this difference (t = 8,56; p = , 05) were found to be statistically significant. This result shows that sport and physical activity can be an important tool in protecting individuals from virtual addiction, such as digital game addiction. Çakır (2013) concluded that "the views of the parents of computer games and the determination of the effects on the student" resulted in the fact that most of the children played computer games because of the time spent and lacked other activities that children could spend their time with. Parents generally commented that digital games negatively affect children in terms of cognitive, emotional, social and psychomotor aspects. The most striking result of the study is that 63.7% of the parents define digital games as an addictive game.[9]

It was determined that the total score of "digital game addiction" according to age of participants was statistically different in favor of students in 14 age group (14 years = 50,60 / 13 years = 43,86) (t = -

3,51; p =, 00 <01). The main reason for this result is that children tend to act more independently than their parents during adolescence transition and tend to exhibit similar-collective behaviors towards their group of friends. It is remarkable that children's and adolescents' common activities and conversations are digital games, and children of this age group exhibit similar behaviors may be a key point in explaining the result of this research. Kale and Erşen (2003) state that children start to move away from their families during adolescence, establish strong ties with their group of friends, and build these ties on certain values.[25] Blinka and Mikuška (2014), "The role of social motivation and socialization in online gaming addiction" found a negative relationship between online gaming addiction and age.[6] According to another result; It was determined that the total score of "physical activity level" did not show a statistically significant difference (t = 1.84, p = 0.06> 0.05). The fact that children at this age are school-aged children is the result of similarities in daily life practices. Considering that the average half-time of a child's school days is passed on to the school, and if the school systems and facilities are evaluated, it is normal that the physical activity levels are similar.

It was determined that the total score of "physical activity level" did not show a statistically significant difference (F = 1.67, p = 0.13> 0.05) according to the variable "daily average digital playing time". It was determined that the participants played digital games for an average of 1-2 hours per day. Considering the average duration of digital gaming, it can be said that this employee does not significantly affect the participation in daily physical activity. The statistical significance of "digital game addiction" was found to be statistically significant (F = 14,91, p = 0,00 <0,01). The participants who played the digital game for 1 hour per day had a digital game addiction score average (41,25), while the daily average of 2 hours played (49,03), 3 hours played (57,31), 4 hours played (58,89) and 5 hours and above (67.00) were found to be statistically significant. Similarly, it was determined that the difference between the average score of the participants who played digital game for 2 hours per day (49,03) and the total score of those who played 5 hours or more (67,00) showed a statistically significant difference. (When the scoring ranges of the digital gaming addiction scale are considered, this score is 49 and the individuals who score above it are classified as -risk group- and -consecutive group). These results; suggests that there is a positive relationship between the duration of daily digital gaming and digital game addiction. Festl, Scharkow and Quandt (2016), in the study "Problem playing computer games in adolescents, teenagers and adults (digital game)"; found that there was a significant and high correlation between the duration of daily gaming and the video game addiction level.[14] Fröolich et al. (2016), "Computer game addiction in adolescents-an example of clinical work"; it was seen that the participants had a significant difference in dependency levels according to the playing time of the daily computer games and those who had a high level of dependency were found to have four hours and over of the daily computer game playing time.[15] Gökçearslan and Durakoğlu (2014), "The study of the secondary school students' computer

game addiction levels according to various variables" the level of dependence of those who play more than 3 hours a day computer game (digital game) is higher than those who play up to 1 hour a day, while those who play several times a week are higher than those who play once a week.[17]

According to research findings; it was found that there was no statistically significant difference in total scores of "Digital game addiction and physical activity level" according to the variables of "Mother education level" (F = 49, p = 0,68> 0,05 / F = 65> 0.05). One of the main reasons for this result is the fact that parents are generally aware of the level of awareness about physical activity-sport, as well as digital play dependency. There are researches that reach the findings in parallel with this research result and in the opposite direction. For example; Solak (2012) found that the attitudes of the students to computer games did not show any significant difference according to the education levels of the parents in the "Master's Thesis of Attitudes towards Aggression and Loneliness in Secondary School Students".[39] However, Gökçearslan and Durakoğlu (2014) found that their mother and father graduated higher than those who graduated from mothers 'primary schools, junior high schools, high school graduates and university / college graduates in their study of "Secondary School Students' Dependency of Computer Game Dependence on Various Variables" game addiction scores.[17]

It was determined that the total scores of "Digital game addiction" did not show any statistically significant difference (F = 1.47, p = 0,22> 0,05). The main reason for this research bulletin may be due to similar reasons in the "mother education level" variable in Table 6. It can be concluded that the level of education of parents does not affect their level of awareness about digital game addiction very much and this is not an effective factor in directing their children. Şahin and Tuğrul (2012) found that the level of father education did not affect the level of computer gaming addiction in their study of "Primary School Students' Computer Game Dependence".[40] But; The statistical significance of "physical activity level" was found to be statistically significant (F = 4.64, p = 0.00 <0.01). While the average level of the father education level was 57.5, the average primary school graduate (51,50), junior high school graduate (52,74) and high school graduate (53,58) were found. When the descriptive statistical results of parental education levels are examined, it is seen that the number of mothers with university degrees is 43 and the number of fathers is 77. According to these results, the level of physical activity of the participants differs according to the level of father education (high level of physical activity of those with high father education level), and the degree of awareness of the university graduates may be higher and their children may lead this issue.

It was found that participants had a high level of negative correlation between total scores of digital play addiction and physical activity level (r = -, 35 ** / p =, 00). As Table 9 examines, it is seen that physical activity levels of students whose digital game addiction is decreased gradually increase. According to these results, it can be said that digital game addiction removes individuals from physical activities, whereas physical activity prevents virtual addictions such

as digital game addiction. Karayağız-Muslu and Bolışık (2009) state that spending too much time on a computer causes children to devote less time to activities such as playing games and doing sports.[26] Lieberman et al. (2009) digital games; they can lead to negative consequences such as sending violence and fear, exhibiting emotional and aggressive behavior, spending a large part of the time with digital games rather than exploratory games, and being away from physical and social activities.[33]

As a result; the relationship between digital game addiction and physical activity level is negatively and meaningfully related to the fact that digital gaming addiction levels of the students who play sports on a daily basis are lower than those who do not play with the digital game addiction which is anticipated as a current issue and evaluated as a subtitle of technology addiction it can be said that one of the most effective methods is to direct children to physical activities. In the researches to be carried out in the next period, using the qualitative research model, further investigation of the subordinate problems related to digital game addiction and physical activity levels of individuals by interviewing and observation methods may provide important contributions to solution of this problem.

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