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THE EFFECTS OF DIGITAL GAME ADDICTION ON INTRA-FAMILY COMMUNICATION

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ABSTRACT

This study aimed to examine the effects of digital game addiction on family communication. In the study conducted in the case of Karaman province, the relationship between individuals' digital game-playing habits and communication styles between family members was analyzed.

A questionnaire was used to gather data from 500 residents of Karaman province who were over the age of 18, and the study was carried out using a descriptive survey technique. The analysis employed the Kruskal-Wallis, Pearson, ANOVA, t-test, confirmatory factor analysis, and explanatory factor analysis. The findings reveal that as the level of digital game addiction increases, communication within the family is negatively affected. Significant differences were found especially in the negative communication dimension.

As a result, it was observed that digital game addiction weakens family interaction and reduces the level of empathy and open communication between family members.

KEY WORDS

digital game addiction, family communication, addiction, family

CLASSIFICATION

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INTRODUCTION

Rapid technological advancements are affecting every part of our life. Every age group and industry will inevitably benefit from this shift to some extent. Time, space, and accessibility have also evolved in the digital age. The main element that makes entertainment and social interaction easier is increased accessibility. This study focuses on the drawbacks that come with this convenience.

In light of all these data, the number of digital game users and the duration of game playing emerge as a new type of addiction. Individuals have difficulty in controlling their playing time and gaming behaviors and their social relationships weaken. This situation also negatively affects academic and economic life. Reduced sharing within the family and a weakened sense of responsibility are also a consequence of this situation. A new type of addiction called digital game addiction forms the basis of this study. The main concern of this study is to reveal the effects of digital game addiction on communication within the family. Child and parent communication, in particular, is a focal point in this regard. The study was designed to measure the effects of this addiction on family communication. To determine digital game addiction and the effects of this situation on family communication we ask:

- What is the level of digital game addiction of the participants?
- What is the level of family communication of the participants in the context of digital games?
- Is there a significant relationship between digital game addiction and the player's family communication?
- What is the level of relationship between digital game addiction and family communication levels according to demographic variables such as gender, age, education level, marital status?

In the study, game technology, the game industry, family structures, communication problems, and addiction types were investigated in depth, and it was determined that there were insufficient examples of family communication and digital game addiction in the literature. The fact that family communication and digital game addiction are examined together distinguishes this study from other studies.

THE EFFECTS OF DIGITAL GAME ADDICTION ON FAMILY COMMUNICATION

Digital game addiction, especially in children and young individuals, is becoming more pronounced, leading to broken family relationships, communication breakdowns, and emotional distance [1].

The literature reveals that increased time spent playing digital games reduces the time spent with family members and disrupts communication [2], emphasize that individuals withdraw from family activities and miss communication opportunities due to gaming behavior. In this regard, phenomena such as communication disorder, family conflict, and emotional alienation come to the fore [3].

NEGATIVE EFFECTS OF DIGITAL GAME ADDICTION ON FAMILY RELATIONSHIPS

The most prominent effects of digital game addiction on the family system are communication breakdown, emotional detachment, neglect of responsibilities, and psychological tension [4].

First, gaming behavior at an addictive level reduces the time spent with family members and face-to-face interaction within the family, leading to a weakening of emotional bonds. It particularly negatively affects children's relationships with their parents, causing detachment

and hindering the development of empathy and understanding [5]. Communication disorder and conflict are among the most common negative consequences of digital game addiction. The fact that the individual who plays games prefers to spend time in the game environment instead of talking to family members causes a feeling of exclusion among family members. In this regard, increased tension at home may lead to an increased frequency of arguments and unresolved conflicts [2]. Emotional distance and alienation are another striking result, especially in adolescents [6].

Another noticeable effect is that individuals neglect their responsibilities within the family. This may lead to the perception of injustice in the distribution of tasks among family members, thus causing relational conflicts [7]. In addition, excessive engagement with digital games may lead to psychological problems such as impatience, anger management problems, and attention deficit. These problems can lead to deeper conflicts by damaging the basic dynamics such as understanding, patience, and support in family communication [8].

As a result, digital game addiction negatively affects not only time sharing but also basic family dynamics such as emotional trust, empathy, and commitment in the family communication process.

POSSIBLE POSITIVE EFFECTS OF DIGITAL GAME ADDICTION ON FAMILY COMMUNICATION

Although digital games are associated with addiction and communication disorders, some studies also show that digital games can contribute to family communication [9]. Shared digital gaming experiences can function as a means of bonding between parent and child. This interaction includes elements such as setting common goals, developing strategies, and celebrating success together [10].

Some parents get to know their children's interests better and increase emotional closeness by showing interest in the games their children play and spending time together. Such interactions help children communicate more openly with their parents and develop feelings of trust [11].

Especially during the pandemic, digital games have become a significant tool for family members in terms of both having fun and stress management, playing digital games together has provided an opportunity to establish a non-routine bond between family members [12]. In addition, digital games can contribute to the development of digital literacy skills and parents' better understanding of the digital world. Conscious parents can set healthy boundaries by experiencing their children's digital lives with them instead of controlling them. Contrary to authoritarian approaches, this attitude can support communication by creating a positive perception on children [13]. Therefore, the positive contributions of digital games in terms of family communication are only possible with planned and guided use.

As a result, digital games can be considered not only as a threat but also as an opportunity that can strengthen family ties.

METHOD AND SCALE ANALYSIS

In order to collect research data, the researcher reviewed similar studies in the literature and prepared a demographic information form, a digital addiction scale, and a family communication scale in the context of digital games.

In order to collect research data, the researcher reviewed similar studies in the literature and prepared a demographic information form, a digital addiction scale, and a family communication scale in the context of digital games. Explanatory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were used to determine the validity of the prepared scales,

and Cronbach's alpha coefficient was used to determine their reliability. The 500 data collected by the researcher were randomly divided into two using the IBM SPSS 23v analysis program; EFA was conducted with the data of 253 people, and CFA was conducted with the data of 247 people [14, 15]. They stated that both EFA and CFA could be conducted on the same sample. The reliability coefficients of the scales were examined in a data set of 253 people. EFA and analyses related to the research questions were performed using the SPSS analysis program, and CFA was performed using the Lisrel 8.7 analysis program

EXPLORATORY FACTOR ANALYSIS AND RELIABILITY ANALYSIS

Before performing the EFA, the Kaiser-Meyer-Olkin (KMO) test was performed to determine whether the sample size was sufficient, and the Barlett sphericity test was performed to determine the suitability of the data set for performing factor analysis, and the findings of the analyses are given in Table 1.

Table 1. KMO value and Bartlett sphericity test results.

Scale		**Digital Game Addi[ction**	**Family Communication in the Context of Digital Gaming**
Kaiser-Meyer-Olkin Value		0,923	0,934
Bartlett's Test of Sphericity	Approx. Chi-Square	2867,779	4072,158
	df	91	120
	p	0,000*	0,000*

*significant at the level $p < 0,001$

When Table 1 is examined, it is found that the KMO value is 0,923 for the Digital Gaming Addiction scale and 0,934 for the Domestic Communication in the Context of Digital Gaming scale, and the results of Barlett's test of sphericity are statistically significant ($p < 0,001$) [16], stated that it is appropriate to perform factor analysis on data sets where the KMO value is greater than 0,60 and the Barlett test of sphericity is statistically significant. Varimax vertical rotation technique was used as the axis rotation technique [16]. While determining the number of factors, structures with eigenvalues greater than 1 were accepted as factors and the scree plot was utilized.

The findings of the factor analysis are presented in Table 2 and Table 3.

When Table 2 is examined, it is seen that 14 items of the Digital Game Addiction scale were collected under 2 factors as a result of EFA. It was determined that the 10th item (Do you hide the fact that you play games from your family?) loaded under both factors and the distances of these loads were less than 0,10. If an item loads under more than one factor, the difference between the loadings should be greater than 0,10 [16] For this reason, the 10th item was removed from the scale on the grounds that it was a binary item and the analysis was repeated. After this item was removed from the scale, items 1-9, 11 and 12 formed the first factor, explaining 49,798% of the variance, the reliability coefficient of this factor was calculated as 0,954, and the factor loadings of the items were between 0,65 and 0,85. Items 13-15 constitute the second factor, explaining 19,538% of the variance, the reliability coefficient of this factor is calculated as 0,768, and the factor loadings of the items are between 0,66 and 0,85. The items in both factors were analyzed in terms of their meaning and Factor 1 was named "Dependency" and Factor 2 was named "Desire for Change".

When Table 3 is examined, as a result of EFA, it is seen that 16 items of the scale of Domestic Communication in the Context of Digital Games are gathered under 2 factors. Any item is not included under two factors at a distance of less than 0,10. If an item loads under more than one factor, the difference between the loads must be greater than 0,10 [16].

Table 2. Factor analysis results for the digital game addiction scale.

Articles	Factor		Explained Variance	Factor Reliabilities
	1	2		
M3 Is playing digital games an important activity in your life?	0,859		49,798	0,954
M6 Do you feel happier when you play games?	0,830			
M4 When you are not playing games, is your mind occupied with the game?	0,826			
M2 Have you gradually increased the amount of time you play digital games?	0,825			
M5 Do you feel more motivated to play games when you are having a bad day or facing a problem?	0,822			
M8 Do you find it difficult to control your gaming time?	0,804			
M7 Do you feel bad when you fail at gaming?	0,800			
M9 Do you feel bad when there is no internet or you cannot play games?	0,774			
M11 Does your digital gaming habit affect your social relationships?	0,714			
M12 Does your habit of playing games affect your work and academic life?	0,699			
M1 Do you feel addicted to any digital element?	0,652			
M14 I want to get professional support to change my digital gaming habits.		0,856	19,538	0,768
M13 I want to change my digital gaming habits.		0,826		
M15 I want my family to support me in limiting my digital gaming.		0,662		
Total			**69,336**	**0,946**

Table 3. Factor analysis results for the scale of domestic communication in the context of digital games.

Articles	Factor		Explained Variance	Factor Reliabilities
	1	2		
M19 Playing games leads to arguments with my family members.	0,874		46,882	0,966
M21 I notice a break in my relationships with family members	0,867			
M20 I prefer to play games instead of spending time with family members	0,864			
M17 My emotional ties with my family members are weakening due to digital games	0,861			
M22 I prefer to play games instead of participating in family activities	0,861			
M25 I cannot establish the same communication with my family members as I do with my gaming friends	0,845			
M24 I find it difficult to have simple conversations with family members about my gaming.	0,845			
M18 I am usually ignored by family members when I play games.	0,840			
M23 I feel more comfortable when I play games than when I am with my family	0,837			
M16 As the time I play games increases, my communication with family members decreases.	0,824			
M28 Playing digital games with family members strengthens our communication within the family.		0,902	28,060	0,918
M27 I want to play digital games with family members.		0,882		
M29 Playing digital games with family members makes my family time more enjoyable.		0,881		
M30 Playing digital games with family members strengthens my emotional ties with family members.		0,854		
M26 My family supports me to limit my digital gaming.		0,697		
M31 I prefer playing digital games with family members to virtual gaming friends.		0,693		
Total			**74,942**	

After determining that there are no overlapping items in the scale, items 16-25 form the first factor, explaining 46,882% of the variance, the reliability coefficient of this factor is calculated as 0,966, and the factor loadings of the items are between 0,82 and 0,87. Items 26-31 constitute the second factor, explaining 28,060% of the variance, the reliability coefficient of this factor is calculated as 0,918, and the factor loadings of the items are between 0,69 and 0,90. The items in both factors were analyzed in terms of their meanings and Factor 1 was named "Communication in a Negative Direction" and Factor 2 was named "Communication in a Positive Direction".

The total variance explained between 40% and 60% is suggested as an acceptable level [16]. In this study, the total varianceswere 69,336% forthe Digital Game Addiction scale and 74,943%for the Digital Game Context Intrafamilial Communication scale. Results showed that explained variance for both scales wer acceptable [16].

Büyüköztürk [15] states that item factor loadings above 0,45 are a good criterion for selection. Considering the factor loadings obtained, the factor loadings of all items above 0,45 indicate that they are sufficient for selection [16]. Reliability coefficient above 0,70 indicates that the scale is well reliable [16].

CONFIRMATORY FACTOR ANALYSIS

After performing EFA, the structure obtained should be tested with CFA [17]. There are many indices in CFA. In this study, χ^2, CFI, NNFI, SRMR, RMSEA indices were used as indicators of model-data fit [17-19]. The ranges for the evaluation of these indices are given in Table 4.

Table 4. Ranges for the evaluation of CFA indices.

Compliance Criteria	Perfect Fit	Acceptable Compliance
χ^2/sd	$0 \leq \chi^2/sd \leq 2$	$2 < \chi^2/sd \leq 3$
RMSEA	$0 < RMSEA < 0,05$	$0,05 \leq RMSEA \leq 0,10$
SRMR	$0 \leq SRMR < 0,05$	$0,05 \leq SRMR \leq 0,10$
NNFI	$0,97 \leq NNFI \leq 1$	$0,95 \leq NNFI < 0,97$
CFI	$0,97 \leq CFI \leq 1$	$0,95 \leq CFI < 0,97$

The results of the CFA conducted to test the model-data fit of the Digital Game Addiction and Family Communication in the Context of Digital Game Scale are given in Table 5.

Table 5. Ranges for the evaluation of CFA indices.

Compliance Criteria	Digital Game Addiction		Family Communication in the Context of Digital Gaming	
	Before Modification	After Modification	Before Modification	After Modification
χ^2/sd	3,45	2,12	4,55	2,69
RMSEA	0,100	0,068	0,119	0,082
SRMR	0,087	0,036	0,048	0,044
NNFI	0,97	0,99	0,96	0,98
CFI	0,98	0,99	0,96	0,98

When Table 5 is examined, the $\chi^2(262,64)/sd(76)$ value of the Digital Game Addiction scale was found to be 3,45 at a significant level ($p < 0,001$), RMSEA value was found to be 0,100, SRMR value was found to be 0,087, NNFI value was found to be 0,97 and CFI value was found to be 0,98. When the values obtained are evaluated according to the ranges in Table 4, it is seen that χ^2/sd value is unacceptable, RMSEA and SRMR values are acceptable, NNFI and CFI values provide excellent fit. In order to bring the χ^2/sd value to an acceptable level and the other values to a better level, it was decided to make two modifications between Item 11 and Item 12, and between Item 13 and Item 14 with the suggestion of the Lisrel program. After the

modifications, χ^2(156,99)/sd(74) value was found to be 2,12, RMSEA value was found to be 0,068, SRMR value was found to be 0,036, NNFI value was found to be 0,99 and CFI value was found to be 0,99 at a significant level ($p < 0,001$). Thus, χ^2/sd, and RMSEA values were evaluated as acceptable fit; SRMR, NNFI, and CFI values were evaluated as excellent fit. The path diagram of the model is given in Figure 1.

When Table 5 is examined, the χ^2(464,47)/sd(102) value of the Intra-Family Communication in the Context of Digital Gaming scale was found to be 4,55 at a significant level ($p < 0,001$), RMSEA value was found to be 0,119, SRMR value was found to be 0,048, NNFI value was found to be 0,96, and CFI value was found to be 0,96. When the values obtained are evaluated according to the ranges in Table 4, it shows that χ^2/sd, and RMSEA values are unacceptable, SRMR value is perfect fit, NNFI and CFI values provide acceptable fit. In order to bring χ^2/sd and RMSEA values to acceptable levels and other values to better levels, it was decided to make 5 modifications between Item 16 and Item 17, Item 18 and Item 19, Item 20 and Item 22, Item 23 and Item 25, Item 24 and Item 25 with the suggestion of Lisrel program. After the modifications, χ^2(264,47)/sd(98) value was found to be 2,69, RMSEA value was found to be 0,082, SRMR value was found to be 0,044, NNFI value was found to be 0,98 and CFI value was found to be 0,98 at a significant level ($p < 0,001$). Thus, χ^2/sd, and RMSEA values were evaluated as acceptable fit; SRMR, NNFI, and CFI values were evaluated as excellent fit. The path diagram of the model is given in Figure 2.

According to Figure 1, the item factor loadings of the Digital Game Addiction scale ranged between 0,43 and 0,92; according to Figure 2, the item factor loadings of the Domestic Communication in the Context of Digital Gaming scale ranged between 0,56 and 0,92. [18] stated that item factor loadings in CFA should not be less than 30. In this context, it was decided that the item factor loadings of all items in both scales were at acceptable levels. After it was determined that the scales used in the study yielded valid and reliable results, descriptive statistics and answers to the research questions regarding the data of 500 participants are given in the findings section.

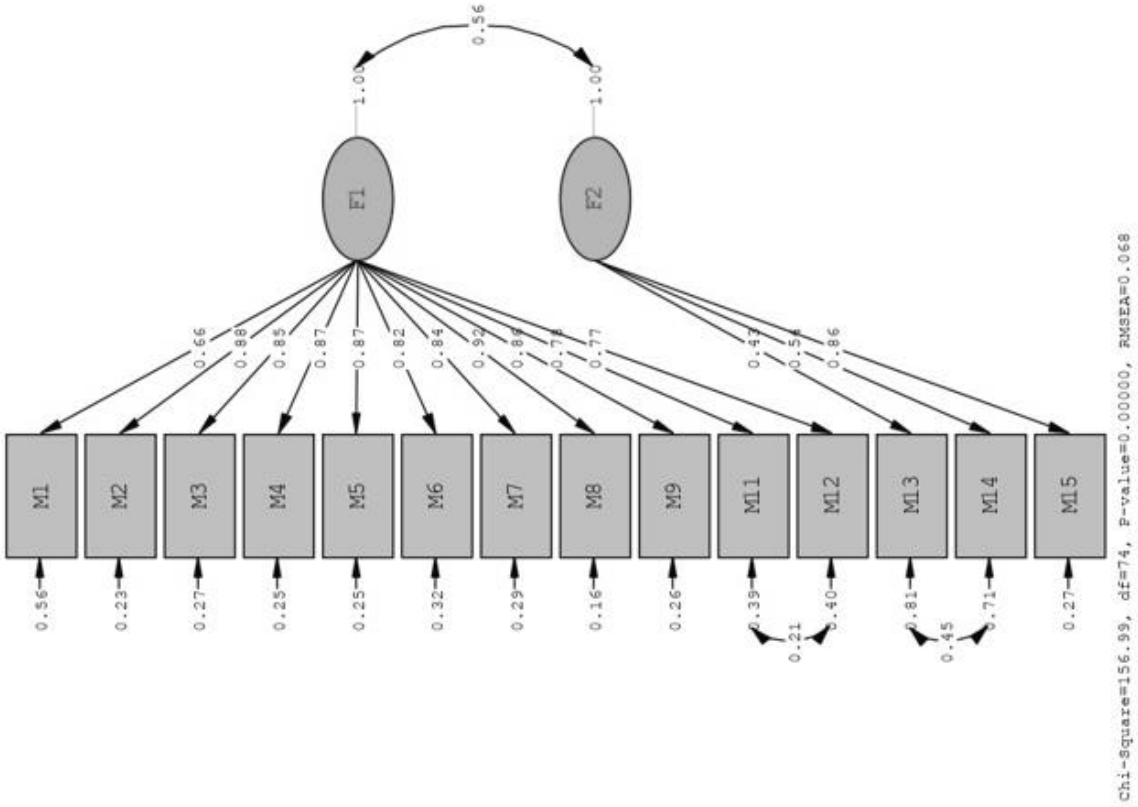


Figure 1. CFA path diagram of the digital game addiction scale.

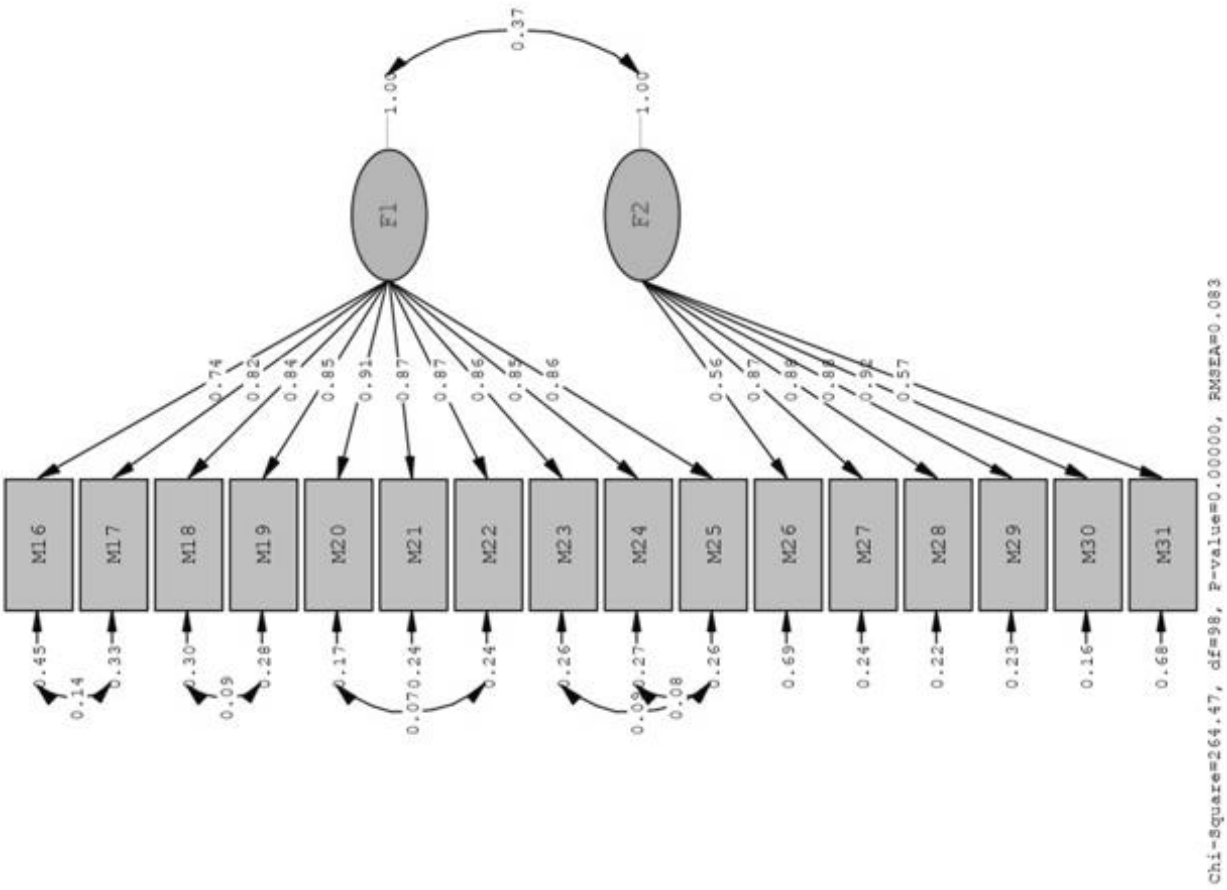


Figure 2. CFA path diagram of domestic communication in the context of digital gaming scale.

RESULTS

Participants were 187 male (37,4%) and 313 female (62,6 %). Most of them had ages between 18-24 (n = 238) and the least of them had ages over 55 (n = 13) years. Most of participants completed associate degree (n = 167). Participants reported that 48,4% of the participants were single (n = 242), 44,2% of them were married (n = 221) and 7,4% of them stated as other (n = 37). Most of participants reported that they chose playing games in mobile phone (n = 369) and those at least were in tablet (n = 20). The most preferred game type by the participants is entertainment type games (n = 153) with 30,6% andthe least preferred game type by the participants was simulation type games (n = 48) with 9,6%.

Data Analysis ANOVA and independent sample t-test were chosen for this study. Before conducting analysis, normality, homogeneity of variance assumptions was checked. Results showed that all data met expected criteria of nomality (between +2,0 and –2,0) and homogeneity of variance (p > 0,05). In ANOVA and t tests, the effect size was calculated with the eta squared (η^2) and the eta squared value of 0,01 was accepted as low, 0,06 as medium and 0,138 as high [20]. In Mann Whitney U test, the effect size was calculated with the formula $r = Z/\sqrt{N}$ and the value of 0,1 was accepted as low, 0,3 as medium and 0,5 as high [19].

DIGITAL GAME ADDICTION

Table 6 shows that mean addiction score of participants was 37,87 (SD = 12,28) and mean change request was 8,28 (SD = 3,20). These scores indicated that addiction level of them was coded as high and change request of them was coded as middle.

Table 7 indicates that participants had mean scores of 32,82 (SD = 12,33) for negative communication and 17,39 (SD = 6,60) for positive communication.

Table 8 shows that there were significant correlation among addiction and negative communication ($r = 0,863$, $p < 0,01$) and addiction and positive communication ($r = 0,406$, $p < 0,01$). Moreover, there were signiciant correlation among change request and negative communication ($r = 0,551$, $p < 0,01$) and change request and positive communication ($r = 0,676$, $p < 0,01$).

Table 9 demonstrates that there were significant differences between gender and negative communication (t_498 = 3,168, $p < 0,05$, $\eta^2 = 0,02$) with a low effect size. There were also significant difference between gender and positive communication (t_347,982 = –2,031, $p < 0,05$, $\eta^2 = 0,01$) with a low effect size. Male participants had significantly higher negative and positive communication than female participants.

Table 6. Descriptive statistics for digital game addiction scale.

Sub Dimension	N	M	SD	Lowest	Highest	Evaluation Score	Comment
Addiction	500	37,87	12,28	11,00	55,00	3,44	High
Change Request	500	8,28	3,20	3,00	15,00	2,76	Midd

Table 7. Descriptive statistics related to the scale of domestic communication in the context of digital games.

Sub Dimension	N	X	SS	Lowest	Highest	Rating Score	Comment
Negative Communication	500	32,82	12,33	10,00	50,00	3,28	Middle
Positive Communication	500	17,39	6,60	6,00	30,00	2,90	Middle

Table 8. Pearson correlation analysis between digital game addiction and the player's family communication.

	Family Communication in the Context of Digital Gaming			
	Subscale		Negative Communication	Positive Communication
Digital Game Addiction	Addiction	*r*	0,863**	0,406**
		p	0,000	0,000
		N	500	500
	Change Request	*r*	0,551**	0,676**
		p	0,000	0,000
		N	500	500

**significant at the level $p < 0,01$

Table 9. Results of the t-test conducted to examine the variation of the participants' family communication in the context of digital games according to gender.

Scale/Subdimension	Category	N	M	SD	T	df	*p*	η^2
Negative Communication	Female	187	30,58	12,85	3,168	498	0,002	0,02
	Male	313	34,16	11,82				
Positive Communication	Female	187	18,19	7,16	–2,031	347,982	0,043	0,01
	Male	313	19,09	6,19				

*significant at the level $p < 0,05$

Table 10 indicates that there was a significant difference between age variable and negative communication (F(2,497) = 11,463, $p < 0,05$). Follow-up test showed that participants aged 18-24 had higher negative communication than those aged 25-34 and 35 and over.

There was a significant difference between age variable and positive communication (F(2,497) = 3,031, $p < 0,05$). Follow-up test demonstrated that participants aged 18-24 had higher positive communication than those aged 25-34 years.

Table 10. ANOVA results to examine the change in family communication in the context of digital games according to age.

Sub-dimension	Group	N	M	SD	VK	Squares Total.	sd	Squares Mean.	F	*p*	Sign. Diff.
Negative Commu-nication	18-24	238	35,51	11,47	Between Groups	3343,124	2	1671,562	11,463	0,000*	1-2, 1-3
	25-34	160	30,74	12,62	Intra--South	72476,034	497	145,827			
	35 and above	102	29,80	12,57	Total	75819,158	499				
Positive Commu-nication	18-24	238	18,11	6,56	Between Groups	261,554	2	130,777	3,031	0,049*	1-2
	25-34	160	16,49	6,58	Intra--South	21442,948	497	43,145			
	35 and above	102	17,11	6,57	Total	21704,502	499				

*significant at the level $p < 0,05$

INVESTIGATION OF FAMILY COMMUNICATION IN THE CONTEXT OF DIGITAL GAMING ACCORDING TO EDUCATIONAL STATUS

In change in family communication in the context of digital games, Table 11, there was significant difference between negative communication and educational status (Welch $F(236,447) = 3,274$; $p < 0,05$). Follow-up test demonstrated that participants with primary and secondary school had higher negative communication than those in associate degree. There were no significant difference between positive communication and educational status ($p > 0,05$).

Table 11. ANOVA results conducted to examine the change in family communication in the context of digital games according to educational status.

Sub-dimension	Group	N	$\bar{X}$	SS	VK	sd	W	*p*	Sign. Diff.
Negative Commu-nication	Primary and Secondary School	68	30,35	10,04	Between Groups	3	3,274	0,022*	1-3
	High School	131	31,24	11,72	Intra-South	236,447			
Positive Commu-nication	Associate Degree	167	34,58	12,51	Total	-			
	Undergraduate and Graduate	134	33,43	13,41					
Negative Commu-nication	Primary and Secondary School	68	17,44	5,91	Between Groups	3	0,342	0,795	-
	High School	131	16,92	6,13	Intra-South	231,621			
Positive Commu-nication	Associate Degree	167	17,46	6,64	Total	-			
	Undergraduate and Graduate	134	17,72	7,31					

Table 12 shows that there was a significant difference between negative communication and duration of the game ($F_4,495 = 54,534$; $p < 0,05$; $\eta^2 = 0,31$). Follow-up test indicated that participants playing game less than 1 hour had higher negative communication than those in 2-3 hours, 3-4 hours and over 4 hours. Moreover, participants playing game with 2-3 hours had higher negative communication than those in 3-4 hours and over 4 hours.

There was a significant difference between positive communication and duration of the game (F_4,495 = 6,845; $p < 0,05$). Follow-up test indicated that participants playing game over 4 hours had less positive communication than those in less than 1 hour, 1-2 hours, 2-3 hours and 3-4 hours. Moreover, participants playing game with 2-3 hours had higher negative communication than those in 3-4 hours and over 4 hours.

Table 12. ANOVA results conducted to examine the change in family communication in the context of digital games according to the duration of the game.

Sub-dimension	Group	N	X̄	SS	VK	Squares Total	sd	Squares Mean	W/F	*p*	Sign. Diff.
Negative Communication	Less than 1 h	110	34,82	11,21	Between Groups	23191,808	4	5797,952	54,534	0,000*	1-3, 1-4, 1-5, 2-4, 2-5, 3-4, 3-5
	1-2 h	79	33,42	9,53	Intra--South	52627,350	495	106,318			
	2-3 h	104	29,81	9,85	Total	75819,158	499				
	3-4 h	85	21,28	10,84							
	4 h or more	122	18,11	9,96							
Positive Communication	Less than 1 h	110	20,27	7,25	Between Groups	-	4	-	6,845	0,000*	1-5, 2-5, 3-5, 4-5
	1-2 h	79	18,53	5,35	Intra--South	-	239,311	-			
	2-3 h	104	19,67	4,65	Total	-	-				
	3-4 h	85	19,28	6,02							
	4 h or more	122	15,80	7,63							

*significant at the level $p < 0,05$

These results reveal that digital game time has a bidirectional and striking effect on communication within the family: As game time increases, positive communication decreases, and at the same time, negative communication scores of individuals who play games for a long time decrease significantly.

One of the most striking findings of the study is that participants who reported the longest gaming duration (4 hours and more) exhibited significantly lower negative communication scores compared to those who played for shorter periods. At first glance, this finding appears to contradict the general expectation that excessive gaming is associated with increased family conflict and communication problems.

Several explanations may account for this result. First, individuals who spend a substantial amount of time playing games may gradually reduce their interaction with family members. Reduced interaction can decrease the frequency of direct conflicts and arguments, resulting in lower reported negative communication scores. In other words, lower negative communication does not necessarily indicate healthier family relationships; rather, it may reflect reduced communication opportunities altogether.

Secondly, prolonged gaming behavior may lead individuals to develop alternative social networks within digital environments. As social and emotional needs are increasingly satisfied through online interactions, family members may become less involved in daily communication processes. Consequently, family-related disagreements may become less visible, while emotional distance increases.

Thirdly, cultural and family adaptation mechanisms may also explain this finding. Families may gradually adapt to the gaming habits of individuals who play for long periods and reduce attempts to intervene. As a result, overt conflict decreases, although emotional closeness and family engagement may continue to weaken.

This interpretation is supported by the finding that positive communication scores were also significantly lower among participants who played games for four hours or more. Therefore, the reduction in negative communication should not be interpreted as an improvement in family relationships. Instead, it may indicate a process of social withdrawal and reduced family interaction. Future studies should investigate this relationship using qualitative methods to better understand how excessive gaming influences family dynamics and communication patterns.

Table 13 shows that there was a significant difference between the device on which the game is played and negative communication (F_3,496 = 4,165; $p < 0,05$; $\eta^2 = 0,02$). Tukey follow-up test showed that participants playing tablet had less negative communication than those in playing computer and console.

Table 13. ANOVA results conducted to examine the change in family communication in the context of digital games according to the device on which the game is played.

Sub-dimension	Group	N	$\bar{X}$	SS	VK	Squares Total.	sd	Squares Mean	F	*p*	Sign. Diff.
Negative Communication	Mobile phone	369	32,20	12,53	Between Groups	1863,057	3	621,019	4,165	0,006*	2-3, 4-3
	Computer	81	35,43	10,90	Intra--South	73956,101	496	149,105			
	Tablet	20	27,30	10,70	Total	75819,158	499				
	Console	30	37,13	12,44							
Positive Communication	Mobile phone	369	17,04	6,73	Between Groups	455,220	3	151,740	3,542	0,015*	2-1
	Computer	81	19,27	5,91	Intra--South	21249,282	496	42,841			
	Tablet	20	18,70	5,15	Total	21704,502	499				
	Console	30	15,67	6,63							

*significant at the level $p < 0,05$

There was a significant difference between the device on which the game is played and positive communication (F_3,496 = 3,542; $p < 0,05$). Tukey follow-up test showed that participants playing computer had less positive communication than those in playing mobile phone.

When Table 19 is examined, the positive communication scores of the participants' intra-family communication scale in the context of digital games show a significant difference at low effect size according to the device they play games (F_3,496 = 3,542; $p < 0,05$; $\eta^2 = 0,02$). According to the results of the Tukey test conducted to determine between which groups there is a significant difference, the scores of the participants who play games on cell phones ($\bar{X} = 17,04$) are significantly lower ($p < 0,05$) than the scores of the participants who play games on computers ($\bar{X} = 19,27$). These findings reveal that the gaming device used can play a determining role on the quality of communication within the family. In particular, the high levels of both negative and positive communication in computer and console users indicate that these users experience more frequent conflict or interaction with the family.

EVALUATION OF FINDINGS AND COMPARISON WITH THE LITERATURE

Modern society is undergoing a rapid technological transformation, significantly shaping individuals' daily lives. While these advancements offer numerous conveniences, they have also contributed to the emergence of behavioral addictions – most notably, digital gaming

addiction. This study examines the impact of digital gaming addiction on family communication, based on data collected from 500 participants.

The Digital Game Addiction and Family Communication Scales used in this study were found to be valid and reliable. Digital game addiction was analyzed under two sub-dimensions: *Addiction* and *Desire for Change*, while family communication was assessed through *Positive* and *Negative Communication* dimensions.

The sample was predominantly male and aged between 18 and 24. This finding is consistent with previous studies indicating that males are more prone to digital game addiction [5, 21]. Addiction levels were higher among younger individuals and those with associate degrees, supporting research that links low academic satisfaction to increased gaming [22].

Single individuals exhibited higher addiction scores, possibly due to the substitution of digital games for social support [21]. Mobile phones were the most common gaming devices (73,8%), and users of mobile phones and computers demonstrated significantly higher addiction scores.

A positive correlation was found between daily gaming time and addiction levels. Participants playing more than four hours per day exhibited the highest scores in both addiction and desire for change, confirming the literature on the time-addiction relationship [23, 24].

Participants primarily preferred entertainment, fighting, and action games – especially via mobile platforms. These findings indicate a cultural tendency toward low-cognitive-load, fast-consumption content [22].

The COVID-19 pandemic accelerated this trend. Isolation measures and increased time spent at home led to a surge in gaming behavior, some of which evolved into pathological use [25, 26].

Over 51% of participants exhibited high or very high levels of digital game addiction, while 43,4% had low motivation to change. This highlights the need for intervention strategies that consider both behavioral patterns and change readiness.

A significant negative correlation was found between digital game addiction and family communication. As addiction increased, positive communication indicators – such as empathy, sharing, and understanding – decreased [1, 5, 16].

Participants who played games with family members reported better communication, whereas those who played alone demonstrated weaker interpersonal bonds. Personal devices like smartphones and computers were linked to emotional distance and reduced family interaction [25].

In conclusion, Pearson correlation analysis revealed a strong positive relationship between addiction and negative communication, and a moderate negative relationship with positive communication. These results underscore that digital game addiction affects not only the individual but also the quality of family dynamics, emphasizing its multidimensional and socially impactful nature.

CONCLUSIONS AND RECOMMENDATIONS

The study includes a sample of 500 individuals aged 18 and older residing in the province of Karaman, Türkiye. The study prioritized users who play digital games.

A descriptive survey model was used in the study. Data were collected through questionnaires administered to participants. The validity and reliability of the scales were tested using EFA and CFA. Additionally, an independent samples t-test, one-way analysis of variance (ANOVA), and the Kruskal-Wallis H test were used to examine differences between groups; Pearson correlation analysis was applied to reveal relationships between variables.

This study comprehensively examined the relationship between digital game addiction and family communication. Results from the Digital Game Addiction Scale indicated that

participants generally exhibited a high level of addiction; however, their desire to change their gaming habits was moderate. Intrafamilial communication was at a moderate level in both positive and negative dimensions. Correlation findings revealed that as digital game addiction increased, negative communication increased significantly ($r = 0{,}863$), while positive communication decreased. These results suggest that digital games can have both divisive and unifying effects within the family. While playing games together can strengthen communication, an individual's excessive gaming time and focus on virtual friends weaken family bonds.

According to demographic analyses, women exhibit lower levels of digital game addiction and higher levels of communication. Digital game addiction is higher among the 18-25 age group; among single individuals, communication scores are low. As educational level decreases, digital game addiction increases and family communication decreases. Longer gaming sessions increase addiction, while shorter gaming sessions increase the desire for change.

The study demonstrates that digital game addiction is not merely an individual problem but a social issue that affects family communication. Accordingly, family-based educational programs, awareness campaigns in schools, psychological counseling services, guidance on game duration and content, the promotion of alternative social activities, and regulations targeting game companies have been recommended.

Based on the findings of this study, the following recommendations are offered regarding digital game addiction and family communication:

1) Family-based education programs should be developed. Digital game addiction has been observed at high levels, particularly among young people. Therefore, it is of great importance to raise awareness among family members about digital games and their effects. Weekly educational modules could be developed and organized by community education centers, municipal family counseling units, or Guidance and Research Centers (RAM). It is anticipated that family-based education programs could help parents properly guide their children's gaming habits.
2) Digital gaming awareness workshops should be organized in schools. To help students gain awareness about digital game addiction, seminars, workshops, and events should be organized through guidance services in educational institutions. A two-week (four-session) awareness program titled "Risks Associated with Gaming" could be organized for middle and high school students.
3) Psychological counseling services should be strengthened. School- and community-based psychological counseling services for individuals with digital game addiction should be expanded, and counseling centers that facilitate individual intervention should be supported.
4) Guidance for families regarding screen time and content should be provided.
5) Oversight and regulation of digital gaming companies should be strengthened.

Researchers are encouraged to conduct long-term studies involving different age groups, family structures, and cultural contexts; to examine how psychological variables influence this relationship; and to test the effectiveness of intervention programs. This study serves as a model for future research.

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