ORIGINAL ARTICLE

Effects of Communication Competency and Self-Esteem on Gaming Addiction Symptoms

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Main Points

- Among internet users, 98.5% of them are online on the internet every day, which enlarges online gaming behaviors and causes maladaptive gaming behavior.
- Gaming addictions have bountiful negative consequences, including physical, psychological, and social.
- People with low communication competency (CC) and low self-esteem (SE) are more eager to spend time playing online games, which makes low SE and low CC an effective factor in extended internet usage.
- Having a high SE and high CC can be a factor in protecting people from internet gaming disorder symptoms.

Abstract

Gaming behavior has become more and more popular, but there has not been any research that considers the relationship between communication competency, self-esteem, and internet gaming addiction symptoms. The main aim of the ongoing study was to assess the associations between internet gaming addiction symptoms, self-esteem, and dimensions of communication competency. For this purpose, data were obtained from 455 individuals (47.7% females and 52.3% males) who reported that they are involved in gaming. In this study, participants were assessed with the following scale set: Sociodemographic Form, Internet Gaming Disorder Scale-Short Form, Communicative Competence Scale, and Rosenberg Self-Esteem Scale. Analyses indicated that the internet gaming disorder total score has a significant and negative correlation with self-esteem and dimensions of communication competency. Besides these results, self-esteem and listening competency of dimensions of communication competency have been found as a significant predictor of internet gaming disorder total score. In the literature, there has been only finite published research analyzing the dimensions of communication competency, self-esteem, and internet gaming disorder.

Keywords: Addiction, communication competency, computer games, internet gaming disorder, self-esteem, technology

Introduction

Recent studies demonstrate that the proportion of people who can access the internet is estimated to be 90.7%. Among those, 79% of them use the internet and 98.5% of them are online on the internet every day (Turkish Statistical Institute, 2020). The expanding availability of internet sources enlarges online gaming behaviors (Young, 2009) with an increase in technological development, people altered by problematic gaming behavior are expanding (Griffiths & Meredith, 2009; Ko, 2014; Young, 2009). Gaming addiction is defined as a pattern of gaming behavior characterized by impaired control over games, giving more concern to games rather than other activities, continuing playing games despite their negative consequences, and playing games even when gaming interferes with other daily activities (WHO, 2018).

To be diagnosed with internet gaming disorder (IGD), a person must express at least five of the symptoms, including preoccupation with gaming;

withdrawal symptoms when not playing; tolerance, which indicates they must spend more time playing to feel satisfied; unsuccessful efforts to trying to quit gaming; giving up and loss of interest in other activities other than gaming; enduring gaming even though they have problems; having a lost relationship or job due to gaming (APA, 2013). Gaming addictions have bountiful negative consequences, including sacrificing and lack of real-life relationships, aggression, hostility, stress, poor academic performance, loneliness, sleeping problems, and poor physical health. The effects of online gaming do not arise only from personal problems. Problems due to online gaming are public health concerns influencing the circle of the player's social, occupational, and academic relationships and health workers. Therefore, problems due to online gaming should be taken seriously. There is still room in the literature for scientific research examining the risk factors for online gaming addiction. These findings are beneficial for clinicians who study treatment and prevention programs for online gaming.

Self-esteem (SE) is found in each person regardless of time and place in which an individual's own and others' evaluation determines the person's self-worth (MacDonald & Leary, 2012). Those with high SE have assurance in their capabilities, more positive attitudes about themselves, trust in their actions, self-respect, self-acceptance, and know they are valued by others (Greenier et al., 1995). It does not mean that a person with a high SE feels superior to others, like individuals who have high narcissistic characteristics (Rosenberg, 1965). In contrast, they accept their deficiencies (Greenier et al., 1995). Individuals with low SE are ambiguous and cautious (Baumeister et al., 2003), have negative attitudes toward themselves and negative self-view, continuously feel ineligible, and rate themselves less favorably than people with high SE, tend to be lonely because they concentrate on their negative perceptions of their aspects rather than socializing itself (Tukuş, 2010).

Results of many studies have affirmed the relationship between addictive behavior and SE, which concludes that low SE is an effective factor in extended internet usage. Additionally, low SE is associated with social media addiction and IGD (Greenberg et al., 1999; Sobell, 2007). Self-esteem and IGD have a strong negative relationship (Greenberg et al., 1999). People with low SE tend to manifest themselves differently from their real identities on gaming sites. If a person has low SE, this person tends to demonstrate himself/herself differently than his/her real self whenever she/he feels not favored by others in the game. Gaming platforms become an incredible world to cover up unsatisfactory components of themselves (Ross et al., 2009; Sheeks & Birchmeier, 2006; Voluse et al., 2007). The availability of the internet sources and the fascinating camouflaging nature of the internet (Ross et al., 2009; Sheeks & Birchmeier, 2007; Voluse et al., 2007) is related to the finding that adolescents with low SE tend to spend more time on the internet, social networking sites, and online gaming (Steinfield et al., 2008). Consequently, low SE is taken as a substantial factor in understanding the risk factors for internet gaming addiction (IGA).

Communication is an adequate way to receive infinite knowledge from other sources and is a need for every human being (Bilgin, 2015). Communication competency (CC) can be defined

as being able to accurately and healthily understand the oral and written sentences which are presented by others (Öztekin, 2016). Communication competency is crucial for those who want to communicate with others healthily as it helps people gain information, make requests from others, establish, and maintain relationships with others (Berger, 2008). Individuals with high CC can declare their thoughts, attitudes, and faith easily to others, understand others' opinions truly, communicate with others appropriately, and impress others (Berger, 2008). They solve obstacles easily compared to people with low CC, which makes the problem tougher to solve (Cüceloğlu, 2006).

Communication competency consists of dimensions, namely, social behavior competence, individual aspects of communication, empathy competence, adaptability competence, sensitivity competence, promote communication competence, human relations, and listening competencies (Wiemann, 1977). To be more specific, social behavior competence indicates individuals' behaviors when encountering a new setting (Koca & Erigüç, 2017) including bodily relaxation cues, physical proximity during the conversation, giving full attention, and not interrupting another person while speaking. Individual aspects of communication require individual skills, including using eye behavior, head nods and facial expressions, and the rate of speech as communicating. Empathy competence emphasizes understanding others' emotional states, including using and understanding other's verbal statements about emotions and facial affect displays like smiling clearly and better (Wiemann, 1977). Adaptability competence emphasizes an individual's capability to adapt and fit in to changing environments and confront changes, finding it easy to meet new people (Wiemann, 1977). Sensitivity competence emphasizes the sensitive acquisition of individuals, including not interrupting another person while speaking, interchanging speaker turns accordingly, giving full awareness to another person, and attending to what other people say (Wiemann, 1977). Promoting CC emphasizes contributions of individual to communication, verbal, and physical clues that show a person is actively listening, including being supportive of others, following the conversation very well, and using voice and body expressively (Wiemann, 1977). Human relations emphasize individuals' communication with other people, including physical proximity during an interaction, giving full attention to another person, not being frightened of speaking with people in authority and being sensitive to others' needs (Wiemann, 1977). Listening competence emphasizes listening abilities, including giving attention to others and concentrating on what the others are saying, being a good listener, and understanding other people (Wiemann, 1977).

Research demonstrates that SE correlates positively with an eagerness to communicate with others. Hence, as SE increases, CC increases accordingly (Silverman, 1973). People with high SE believe in themselves as having good CC that improve their eagerness to communicate (Riggio et al., 1990). In contrast, people with low SE have complications expressing themselves (Glauser, 1984) and they prefer to communicate through e-mail rather than face-to-face communication (Joinson, 2004). In conclusion, people who have high SE find communication and social interaction activities more straightforward than people who have low SE (Glauser, 1984).

People who prefer to play games rather than communicate with their family and friends become more individualistic; hence, they cannot socialize adequately in real-life settings, they become lonesome, and their interpersonal relationships damage (Köse, 2013; Bilgin, 2015). Deterioration in interpersonal relationships also negatively affects a person's CC (NIMF, 2005). Likewise, a negative correlation was discovered between CC and IGD levels. As IGD level increases, CC levels decrease (Bilgin, 2015).

Most clinicians have agreed on the importance of CC (Berger, 2008) and SE (Greenberg et al., 1999; Sobell, 2007). There is a negative relationship between gaming problems with SE (Greenberg et al., 1999) and CC (Bilgin, 2015). High CC has a positive effect on SE (Silverman, 1973). Eventually, people who have high CC and SE are more eager to spend time with others rather than playing.

Low SE and CC yield damaging their face-to-face CC and their IGD symptoms are forecast to increase. Therefore, having a high SE and CC can be a factor in protecting people from IGD.

Although literature findings related to SE and gaming have been recently reported, so far, there has been no study published regarding the association of SE, CC dimensions, and gaming altogether. Therefore, this paper addresses to examine the relationship between SE, CC dimensions, and gaming and determine the contribution of SE and factors of CC to the development of IGD. It was hypothesized that IGD symptoms have a significant and negative relationship to both different dimensions of CC and SE.

Methods

Participants and Procedure
This study is consistent with the ethical standards for research involving volunteer participants. Informed consent was given. Respondents who were students at the university in Ankara were reinforced with bonus points added to student's overall course grades to increase participation. The online survey was answered anonymously (no personal data and internet protocol [IP] addresses were collected), but to be able to differentiate the credit owners for grading and fair remuneration, they were claimed to use nicknames. Ethical approval has been received from the Committee of a University in Ankara with the approval code "ddc7ed7b-6866-4361-a0c4-e9121a0c1081."

A comprehensive battery of psychometric self-report scales was prepared, and the data have been collected online from February 25, 2019, to April 29, 2019. A cross-sectional design study was conducted with Turkish native speakers aged between 18 and 30. The Qualtrics survey link was shared with participants. However, participants were not penalized for dropping out of attrition. The study surveyed 766 individuals aged 16 – 30 years. Respondents' data were excluded because of suspicious, incomplete data, not fulfilling including criteria (playing online games), and having excluding criteria (being out of the 16 – 30 age range). A total of 696 respondents of young adults (mean age, 18.7 years, standard deviation (SD) = 3.4) were analyzed, 58.6% of participants are females (n = 408) and 41.4% are males (n = 288). Among them, only 455 respondents reported that they were involved in gaming.

Therefore, 455 participants were statistically analyzed (mean age, 22.6 years, SD = 2.4), 47.7% of participants are females (n = 217) and 52.3% are males (n = 238).

Measures
Sociodemographic Form (SDF): SDF comprises questions about a person's sociodemographic information such as age, gender, relationship status, and online/offline gaming behavior, including time intervals and game types.

Internet Gaming Disorder Scale-Short Form (IGDS9-SF): IGDS9-SF was developed to measure IGD by Pontes, Király, Demetrovics, and Griffiths in 2012 and contains 20 items (Demetrovics et al., 2012). In 2015, Pontes and Griffiths adapted a short form of the scale, which contains 9 items and is scaled with a 5-point Likert type (0 – 5). Cronbach's alpha for the original scale was reported as .87 (Pontes & Griffiths, 2015). Evren and colleagues adapted the IGDS9-SF to Turkish in 2017 (Evren et al., 2017). The Turkish version's Cronbach's alpha was reported as .89, and adequate convergent and criterion-related validity were reported (Evren et al., 2017). The correlation coefficient was found to be .87 for this sample.

Communicative Competence Scale (CCS): CCS was developed to assess CC and the adequacy to choose the correct communication behavior by Wiemann in 1977. In this scale, there are five dimensions, and the Turkish version has eight dimensions, including social behavior competence, individual aspects of communication, empathy competence, adaptability competence, sensitivity competence, promote communication competence, human relations, and listening competence. The scale consists of 36 items and is scaled with a 5-point Likert type (0 – 5). The coefficient alpha was reported as .96 and high construct and concurrent validity were reported (Wiemann, 1977). The scale has two different versions, including self-evaluation in which individuals evaluate themselves and other individuals evaluate the person (Wiemann, 1977). Koca and Erigüç adapted the self-evaluation version to Turkish. The Turkish version contains 30 items. Cronbach's alpha was reported as .87 and reliability was reported as .93 (Koca & Erigüç, 2017). The correlation coefficient was found to be .93 for this sample.

Rosenberg Self-Esteem Scale (RSE): Rosenberg developed the RSE in 1963. The scale consists of 10 items and is scaled with a 4-point Likert type (0-4). In scoring, low scores indicate high SE, whereas high scores indicate low SE. Construct validity was reported and Cronbach's alpha for internal consistency was reported as .88. The Turkish version of the RSE was adapted by Tukuş in 2010. Cronbach's alpha was reported as .87 (Tukuş, 2010). The correlation coefficient was found to be .87 for this sample.

Analyzes
Statistical analysis was performed using the Statistical Package for the Social Sciences (version 21.0) package. Descriptive analyses were conducted on occupational status, with whom participants live, whether they have a personal computer and video game console, internet connection, which a group of players they define themselves, average time spent online playing for a year, online/offline game preference, mobile gaming, and whether

their gaming routine changes on weekends. Spearman correlation coefficients were used to compare associations between the total score of IGD and SE and dimensions of CC.

Linear multiple regression analysis was used to evaluate the relationship between IGD, SE, and dimensions of CC. Regression analysis allows for highlighting the relative importance of each predictor and determines the specific effect of each because it considers the relationship between the various predictors. The level of significance was set at $p < .05$.

Results

Initially, descriptive analyses were run. Individual internet access rates were high for the participants ($n = 453$, 99.6%), as were the mobile internet access rates ($n = 452$, 99.3%). The frequency of having an individual computer was high as well ($n = 437$, 96%). Most of the respondents live with their family ($n = 283$, 62.2%) and were students ($n = 338$, 74.3%). Most of the players were gamers for their pleasure ($n = 356$, 78.2%). Participants' demographic information is summarized in Table 1. Respondents prefer playing both online and offline games ($n = 229$, 50.3%). The annual weekly average time spent on playing games excluding professional or academic involvement was piled. That is, the number of players spent average time less than 7 hours ($n = 124$, 27.3%), between 7 and 14 hours ($n = 167$, 36.7%), between 15 and 28 hours ($n = 107$, 23.5%), and equal to or more than 29 hours ($n = 57$, 12.5%) per week. The frequency of those who play online games

Table 1.
Demographic Information from Participants

Categorical Variables	#	%
Gender		
Female	217	47.7
Male	238	52.3
Occupation		
Full-time job	59	13.0
Part-time job	20	4.4
Unemployed	32	7.0
Student	338	74.3
Other	6	1.3
Living with whom		
Alone	44	9.7
Partner	13	2.9
Housemate	56	12.3
Family	283	62.2
In dormitory	43	9.5
Married, with family	16	3.5
Total	455	100
Continuous Variables	*M*	*SD*
Age	22.6	2.4

% = percentage of the sample; # = frequency.
M = mean of the sample; SD = standard deviation.

Table 2.
Descriptive Analyses

Categorical Variables	#	%
Having internet access		
Yes	453	99.6
No	2	0.4
Mobile internet access		
Yes	452	99.3
No	3	0.7
Having computer		
Yes	437	96.0
No	18	4.0
Playing mobile games		
Yes	357	78.5
No	98	21.5
Playing more than normal at weekends		
Yes	247	54.3
No	208	45.7
Total	455	100

% = percentage of the sample; # = frequency.

via mobile phones was observed to be high ($n = 357$, 78.5%). Almost half of the participants reported that their frequency of gaming activity increases on weekends ($n = 247$, 54.3%). Results of the descriptive analyses are given in Tables 2 and 3.

Spearman correlation coefficients were used to compare associations between total score of IGD and SE and factors of CC. Results revealed that IGD total score was significantly

Table 3.
Gaming Causes, Types, and Times

Categorical Variables	#	%
Causes of playing		
Professional e-sporter	4	0.9
Amateur e-sporter	10	2.2
For own pleasure, follows e-sports	85	18.7
For own pleasure	356	78.2
Game types		
Online	151	33.2
Offline	75	16.5
Both	229	50.3
Time spent per week on playing		
Less than 7 hours	124	27.3
Between 7 and 14 hours	167	36.7
Between 15 and 18 hours	107	23.5
Higher than or equal to 29 hours	57	12.5
Total	455	100

% = percentage of the sample; # = frequency.

and negatively in correlation with SE total score ($r = -.28$, $p < .001$) and dimensions of CC, namely social behavior competence ($r = -.20$, $p < .001$), individual aspects of communication ($r = -.24$, $p < .001$), empathy competence ($r = -.22$, $p < .001$), adaptability competence ($r = -.30$, $p < .001$), sensitivity competence ($r = -.25$, $p < .001$), promote communication competence ($r = -.22$, $p < .001$), human relations ($r = -.25$, $p < .001$), and listening competence ($r = -.27$, $p < .001$). Results of correlational analysis are summarized in the Table 4.

Linear regression analysis was used to determine the contribution of SE and factors of CC for predicting IGD. The possible problem of multicollinearity among independent variables was confirmed from the variance inflation factor ($VIF < 4$) and from the tolerance score (SE and factors of CC, $tolerance > .20$). The data also fulfilled the assumption of independent errors ($Durbin - Watson$ $value = 1.88$), and the scatterplot of standardized residuals indicated that the data fulfilled the suppositions of homogeneity of variance and linearity. Table 4 summarizes the descriptive variables of the predictors performed in this model. Nine independent variables were entered into the model using the "enter" method.

The dependent variable was the total score on the IGD, and the independent variables were the SE and factors of the CC scale scores. All independent variables are entered into the regression equation. The model was significant. SE and listening competency in this model explained 14% of the variance in IGD scores. Self-esteem ($t = -2.52$, $p < .05$) and listening competence factor of CC ($t = -2.85$, $p < .01$) were significant predictors of IGD total score ($F(9445) = 8.064$, $p < .001$, $R^2 = .14$, $R^2_{Adjusted} = .12$). Table 5 summarizes the predictors in the linear regression analysis predicting IGD symptoms (IGD scores).

Discussion

The major aim of the study was to assess the associations between IGD symptoms, SE, and dimensions of CC. A comprehensive battery of psychometric self-report scales was prepared, and a cross-sectional design study was conducted with university students and Turkish native speakers. The results of the study affirmed our hypotheses; IGD symptoms have a significant and negative relationship with all dimensions of CC and SE. This

Table 4.
Correlation Table

	IGD	SE	SBC	IAC	EC	AC	SC	PCC	HR
SE	−.281*								
SBC	−.200*	.401*							
IAC	−.244*	.446*	.567*						
EC	−.219*	.290*	.376*	.691*					
AC	−.297*	.418*	.458*	.688*	.638*				
SC	−.252*	.450*	.538*	.693*	.571*	.668*			
PCC	−.215*	.385*	.448*	.598*	.549*	.568*	.576*		
HR	−.251*	.374*	.475*	.631*	.524*	.590*	.438*	.599*	
LC	−.268*	.358*	.138**	.262*	.337*	.377*	.257*	.317*	.341*

SE = self-esteem total; IGD = internet gaming disorder total; SBC = social behavior competence; IAC = individual aspects of communication; EC = empathy competence; AC = adaptability competence; SC = sensity competence; PCC = promote communication competence; HR = human relations; LC = listening competency.
*$p < .001$, **$p < .01$.

Table 5.
Predictors in the Linear Regression Analysis Predicting Internet Gaming Disorder Symptoms (IGD Scores)

	Min	Max	B	SE	Beta	t	p
SE total	0	3	−.182	.072	−.135	−2.523	.012*
Social behavior competence	1	5	−.029	.051	−.033	−.573	.567
Individual aspects of communication	1	5	.032	.093	.028	.348	.728
Empathy competence	1	5	−.007	.071	−.007	−.102	.919
Adaptability competence	1	5	−.131	.075	−.125	−1.756	.080
Sensitivity competence	1	5	−.059	.077	−.055	−.772	.440
Promote communication competence	1	5	.033	.074	.028	.448	.654
Human relations	1	5	−.067	.063	−.069	−1.065	.288
Listening competence	1	5	−.145	.051	−.144	−2.851	.005**

*$p < .05$, **$p < .01$, Base $n = 455$.
SE total = self-esteem total.

correlation is consistent with the literature (Greenberg et al., 1999; Steinfield et al., 2008; Bilgin, 2015).

To assess whether these correlational relationships are strong enough to be a predictor, linear regression analysis was used. The dependent variable was the total score on the IGD, and the independent variables were the SE total score and different dimensions of CC scores. As a result, low SE was found to be a significant predictor of IGD consistent with the previous studies (Greenberg et al., 1999; Sobell, 2007; Steinfield et al., 2008; Ross et al., 2009; Sheeks & Birchmeier, 2006; Voluse et al., 2007).

Self-esteem is the self-value that people give themselves (MacDonald & Leary, 2012). Since people with high SE have self-confidence, can tolerate their weaknesses, and daily life stresses, they do not need any alternative way to cope with them (Riggio et al., 1990). In contrast, people with low SE have struggled to accept their weaknesses (Baumeister et al., 2003) and try maladaptive ways including excessive gaming behavior to cope with their weaknesses and daily life stresses (Glauser, 1984; Joinson, 2004) since gaming platforms give them an incredible opportunity to mask their low SE (Berger, 2008; Bilgin, 2015) and become who they want to be and create a negative reinforcement as it decreases their overwhelming feelings caused by an inability to deal with their weaknesses and daily life stressors (Ross et al., 2009; Sheeks & Birchmeier, 2006; Voluse et al., 2007) which makes them get inclined to continue playing despite its negative consequences and repeatedly prolong their real-life problems (Schneider et al., 2018).

In this study, consistent results are obtained on SE in the Turkish population, but there is a discrepancy from preceding studies. The relationship with CC has been examined as well, which is a new contribution to the literature. Nonetheless, since IGD symptoms have a significant negative relationship with all dimensions of CC as expected, there was an unexpected result; although all dimensions of CC correlate with IGD total score, only listening competency was found as a significant predictor of IGD. Self-esteem has been found as a predictor of IGD symptoms in previous research, but when the relationship between CC and IGD symptoms is examined, listening competency was also found as a predictor of IGD symptoms as strong as SE, which can be essential for figuring out IGD.

Communication competency is the ability to precisely understand and establish a relationship with others, thus it is very critical for people who want to communicate healthily (Öztekin, 2016; Berger, 2008). Listening competency calls for many skills are also required to be an effective communicator, including attention, concentration, and memory skills (Wolvin & Coakley, 1994). Being an effective communicator leads people to socialize face-to-face since it makes communication more effortless (Bilgin, 2015). When face-to-face socializing seems like a fulfilling activity, there is no need for these people to search for alternative ways to socialize, which may decrease their computer or internet usage times (Cava, 2014). Listening competency is also an important component that affects people's willingness to communicate, listen to other people (Wolvin & Coakley, 1994), and their communication quality, so people with low listening competency may not prefer to be social than people with high listening competency which may lead them to play and use computer-based communication

rather than socialize and communicate face-to-face (Köse, 2013; Bilgin, 2015). Listening competency also requires being able to listen to other people without prejudice and emotional reactions (Wolvin, 1994; Wiemann, 1977). It is necessary to have high SE and high self-confidence to listen and concentrate on other people during communication (Berger, 2008). Since people with low SE have struggled to accept themselves as who they are (Ross et al., 2009; Sheeks & Birchmeier, 2006; Voluse et al., 2007) and struggle to solve daily-life problems, they are so preoccupied with thinking about their problems (Glauser, 1984). It may be too tough to turn attention to the external world if a person has problems in his/her internal world, which causes these people not to focus on the other person and listen to what he/she says (Wiemann, 1977).

A negative relationship between listening competency and gaming behavior may be related to gamers' maladaptive gaming behavior, low SE, and low CC, which leads to backlashes from people around them and causes conflicts between them (Köse, 2013; Bilgin, 2015). However, these reactions and conflicts cause gamers not to listen and focus on what they enjoy, which is gaming, resulting in intensified addiction symptoms. Focusing on gaming makes their behavior more problematic and frequent and causes people around them to react more. These reactions eventually lead to a vicious cycle of problems.

In the literature, there is a lot of research on gaming behavior's negative effects on players, including sleeping problems, psychosocial distress, depression, anxiety, and lower life satisfaction (Demetrovics et al., 2012; Young, 2009). There has been only limited published research on potential protector factors that are SE and CC. However, there has not been any published research analyzing neither CC and gaming behavior nor considering the relationship between dimensions of CC, SE, and IGD.

Limitations and Suggestions for Future Research

The current study has some limitations. Initially, an online survey has been used to collect data that exclude people who cannot access the internet; thus, reaching offline gamers becomes challenging via this method. Second, there may be some participant biases about responding to self-report questions, including giving socially desirable answers or answering survey questions without taking them seriously. Third, there was salient data loss. That is, only 455 out of 766 respondents were included in the statistical analysis, and 311 respondents' data were excluded after data screening. Since it was an online study, participants may skip the instruction part clarifying inclusion and exclusion criteria. Also, it is known that impulsivity (Dalbudak et al., 2013) and novelty seeking (Lee et al., 2017) are risk factors for gamers. Being unable to complete the questionnaires could be a manifestation of impulsivity and novelty seeking. Finally, since the current study is cross-sectional, generalization of the results is difficult. However, the results of the present study make an important contribution to the gaming research literature by studying underlying factors of IGD which have not been studied until now and predicting the IGD symptoms.

Finally, in this study, SE and listening competency were significant predictors of IGD score, which makes it conceivable for forthcoming studies to benefit from this study's results by using the protector factors of IGD in the treatment and psychotherapy. In psychotherapy sessions with people who have IGD symptoms,

working on bettering CC and SE is helpful to protect them from the IGD symptoms. If they have better CC and higher levels of SE, they are unlikely to find online communication easier (Young, 2009), which is an aid and accelerator for their treatment, and their IGD symptoms may decrease. Psychotherapy for gamers will be better if the therapy process is online since gamers find online platforms more comfortable due to increasing gaming behavior during the COVID-19 pandemic. Additionally, during the pandemic, face-to-face activities are exchanged with indoor and online activities; thus, it will be better if the therapy process is conducted online. In this study, the data were not collected during the pandemic, but it would be beneficial if the same study is conducted during the pandemic. It would be beneficial if future studies examine the differences in communication competencies between gamers who show severe IGD symptoms and people who are not gamers. Besides, examining the relationship with friends and relatives of people who have IGD symptoms before and after the treatment would be beneficial too.

Ethics Committee Approval: Ethical committee approval was received from the Ethics Committee of Çankaya University (approval no: ddc7ed7b-6866-4361-a0c4-e9121a0c1081).

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