Automatic Thoughts, Narcissism and Computer Game Addiction in Children

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ABSTRACT

The purpose of this study is to investigate the relationship between automatic thoughts, narcissism and computer game addiction in children. In this context, the relational survey model, which is one of the quantitative research approaches, was used. The measures were applied 306 4th grade students studying at different primary schools which are in a city in Central Anatolia Region in Turkey. "Computer Game Addiction Scale for Children", "Children's Automatic Thoughts Scale" and "Childhood Narcissism Scale" were utilized to collect data. The relationships between variables, which are automatic thoughts, narcissism and computer game addiction, were tested through correlation analysis on SPSS v18. The model and predictive relationships were analyzed via the structural equation model on AMOS v24. The results of the analysis showed that fit index values of the model reflecting the relationships between computer game addiction and automatic thoughts and narcissism, are within acceptable range and the model was accepted. It was found that there were positive and significant relationships between computer game addiction, automatic thoughts and narcissism. It was also found that computer game addiction positively predicted automatic thoughts and narcissism. The results of the research were discussed in the light of the literature and suggestions were made.

Keywords: Child, Computer Game Addiction, Automatic Thoughts, Narcissism

INTRODUCTION

Computer games are defined as activities that arouse the curiosity of those who play games with visual and auditory stimuli in the virtual environment, encourage their struggle and make them have enjoyable time (Tüzün et al., 2013). Previous studies showed that computer games can have negative effects (Griffiths et al., 2012) as well as positive ones (Cole & Griffiths, 2007).

Some studies showed that games improve visual and attention skills in children, and increase behavioral performance in perceptual tasks (Green & Bavelier, 2003; Green et al., 2010). However, some other studies emphasized that these games greatly affect the presence of ADHD and other anxieties such as suicide, self-harm and aggressive behavior, and increase sensitivity in signals of sadness, happiness, pain and aggression (Pichon et al., 2021; Sunil et al., 2021). These negative effects led to the development of concepts such as pathological internet use, internet addiction, and computer game addiction (Sim et al., 2012).

Computer game addiction can be defined as excessive and compulsive gaming and the inability to control it, which can cause social and/or emotional problems in many areas of life (Lemmens et al., 2009; Vollmer et al., 2014). Considering the historical process of computer game addiction, it can be seen that the first case studies on the subject were documented in 1983, and the first scientific studies were published in the middle of 1990. In that period, pathological gambling criteria included in DSM-4 were adapted to computer game addiction studies (Gentile, 2009). In the companion of DSM-5 published in May 2013, it was evaluated within the internet game playing disorders (APA, 2013).

Advances in technology, developments in the field of computers and the internet have affected children's computer gaming behavior (Horzum et al., 2008; Gentile et al., 2011). Recently, due to the restrictions of the COVID-19 epidemic, children's use of communication technologies, internet and computer have increased intensively. Since this increase also results in computer game addiction, it has risks especially for children (King et al., 2020).

The gradual increase in computer game addiction behaviors and the fact that they cause many risks has led to an increase in the studies on the subject. Studies have revealed various negative effects of computer game addiction (Gonzalez-Bueso et al., 2018). Studies conducted in this context have revealed that computer game addiction damages the prefrontal cortex (Mori et al., 2015) by causing a lack of empathy (Bartholow et al., 2005), problems in social relationships (Liu & Chang, 2016). In addition, studies have shown that computer game addiction causes hostile behaviors (Chiu et al., 2004), attention problems (Swing et al., 2010), marked differentiation in the structural features of the brain (Han et al., 2012), impulsivity (Oh, 2004), automatic thoughts (Öztürk & Sarıkaya, 2021) and narcissistic personality traits (Kim et al., 2008; Nawaz et al., 2020; Pantic et al., 2017; Zandi Payam & Mirzaeidoos, 2019).

Narcissism is the orientation of one's pleasure to oneself, overconfidence on oneself rather than others (Duss & Chiodo, 1991). Besides, narcissism refers to the individual's sense of grandeur and the need to be seen and admired by others (Thomaes et al., 2013). Researchers indicate that childhood narcissism and adult narcissism have similar psychological and interpersonal relationships (Thomaes et al.,2008).

Studies on childhood narcissism support the social learning theory perspective on narcissism. According to this theory, childhood narcissism arises with the internalization of parents' inflated views about their children (Brummelman et al., 2015). However, there are different perspectives on narcissism in the literature.

Freud defines two types of narcissism as; primary narcissism that manifests itself in an explicitly dominant way in the individual's object selection and a secondary narcissism superimposed on it (Freud, 1998). Besides Freud, Heinz Kohut took narcissism as a pause in the developmental process in the Self Psychology theory (Kohut, 1998). Fromm classified narcissism in two groups as social narcissism and individual narcissism (Fromm, 2014). In recent studies, narcissism is considered in two dimensions as grandiose and fragile (vulnerable) narcissism, and studies are carried out in this direction.

When studies on narcissism are examined in the literature, narcissism has been found to be associated with hostile interpersonal relationships (Thomaes et al, 2008), low self-esteem and behavioral problems (Thomaes et al. 2009) in children. Besides, the studies on narcissism revealed that narcissism is associated with low self-esteem and behavioral problems (Barry et al., 2003), aggression (Ang & Yusof, 2005; Lobbestael et al., 2014), social media use (Andreassen et al., 2017), and game addiction (Kim et al., 2008; Nawaz et al., 2020; Zandi Payam & Mirzaeidoos, 2019). Furthermore, studies have shown that narcissistic individuals post attractive photos on social media to present themselves, update their status more on social media (Wang et al., 2012), follow others' comments and likes frequently (Lee & Sung, 2016) and use Facebook extensively (Ryan & Xenos, 2011). In addition to their egocentrism, narcissistic individuals attach great importance to the thoughts of others (Boleli, 2018), they can make cognitive distortions, develop lack of love and imperfection, and have repetitive thoughts (Young et al., 2019).

Repetitive thoughts consisting of over-generalizations such as prejudice and logic errors can be defined as automatic thoughts. Automatic thoughts are the thoughts triggered by events (King & Delfabbro, 2020). These thoughts may appear involuntarily in the stream of consciousness as a reaction to negative emotional states (Leahy, 2015) as the end products of core beliefs and intermediate beliefs (Beck, 1976). There is a relationship between the automatic thoughts and beliefs of individuals, as well as between these thoughts and their behaviors and emotions. As a matter of fact, it is believed that when individuals' negative automatic thoughts can be changed, their behavioral and emotional distress can also disappear (O'Donohue & Fisher, 2009).

Studies showed that automatic thoughts are associated with anxiety disorders, dysfunctional attitudes (Iancu et al., 2015; Şoflău & David, 2017; Weck et al., 2012), aggression (Calvete & Connor-Smith, 2005; Schniering & Rapee, 2004), negative self-expressions (Schniering & Rapee, 2002) and anxiety (Nolen-Hoeksema, 2000). Besides studies revealed that among children there is a significant relationship between negative automatic thoughts and depression (Kercher et al. 2009), aggression (Martin & Dahlen 2004).

The aim of this study is to examine the relationship between computer game addiction and automatic thoughts and narcissism in children. Öztürk and Sarıkaya (2021) found that there is a significant relationship between game addiction and automatic thoughts in their study held with secondary school students. Nawaz et al. (2020) found a significant relationship between game addiction and narcissistic tendencies in their study with PUBG players. Basha (2021) found a significant relationship between game addiction and tender-mindedness personality traits and neuroticism. Kim et al. (2008) emphasize that game addiction and narcissistic personality traits were positively related in their study. Zandi Payam and Mirzaeidoos (2019) found a significant relationship between game addiction and narcissistic personality traits and cognitive disturbance. The findings suggest that there might be a significant relationship between computer game addiction and automatic thoughts and narcissism. In addition, these findings suggest that computer game addiction may predict

automatic thoughts and narcissism. Indeed, there is relationship between addictive behaviors and personality traits (Wang et al., 2015). In this context, the similarities between addictive behaviors and narcissistic behaviors are striking. In both cases, individuals focus on meeting their own needs and neglect to develop responsibility and commitment to other people (Knipe, 2018). Both conditions are assumed to be accompanied by negative automatic thoughts.

In this research, the coexistence of computer game addiction and automatic thoughts and narcissism in children was examined. Reviewing the literature, no study was found that examined these three variables simultaneously. Besides, it was noticed that the direction and level of the relationship between these variables were not clearly stated. Therefore, in this study, it is evaluated that the SEM application to investigate the relationship between computer game addiction and automatic thoughts and narcissism in children can shed light on the gap in this area.

Studies have shown that computer game addiction may include many risk factors in the child's development process (Bartholow et al., 2005; Chiu et al., 2004; Di Blasi et al., 2020; Gonzalez -Bueso et al., 2018; Han et al., 2012; Hazar & Ekici, 2021; Liu & Chang, 2016; Mori et al., 2015). Especially computer game addiction can be associated with narcissistic personality traits, the first symptoms of which are seen in childhood and then manifest in adulthood. It can also be associated with negative automatic thoughts that make the child's perceptions of himself and others negative. Therefore, this study will facilitate the understanding of the population at risk for computer game addiction. Suggestions can be made to limit narcissistic development at an early age and to limit negative automatic thoughts. With this article, it will be possible to contribute to the functionality of prevention and intervention studies by making inferences for the families, friends, teachers and therapists of computer gamers.

Because of the coronavirus (COVID-19) epidemic, it is possible to say that staying at home and quarantines have greatly increased participation in computer games. This may pose risks, in particular for some vulnerable individuals (King et al., 2020). It is thought that this research conducted during the coronavirus (COVID-19) epidemic period will shed light on the current situation. Moreover, this study will draw attention to the negative effects of computer games on children and make suggestions for possible risks. So the purpose of the study is to investigate the relationship between computer game addiction and automatic thoughts and narcissism in children. This research examines two hypotheses: The first one is that there is a significant relationship between automatic thoughts, narcissism and computer game addiction in children. The second one is that computer game addiction predicts automatic thoughts and narcissism.

METHODS

Research Model

In the current study, the relational survey model, which is one of the quantitative research approaches, was used. The target of the Relational survey model is to state the presence and /or degree of change between two or more variables (Karasar, 2009).

Sample of the Research

The research was conducted using convenience sampling method, which is a technique of nonprobability sampling. The sample of this study is 306 4th grade students attending primary schools which are in a city in Central Anatolia Region in Turkey. Participants consisted of 148 female (48%) and 158 (52%) male students. Prior to applying, the participants were given information about the aim of the research and surveys. The parents of the students were asked to read, approve and sign the written consent forms with the support of the teachers of the students. Subsequently, the created pencil-and-paper surveys were filled by the children. The surveys were completed in approximately 30 minutes.

Data Collection Tools

Computer Game Addiction Scale for Children. The sample of the scale, which was developed by Horzum et al. (2008) to measure children's computer game addiction, consisted of 460 students attending primary schools of different socioeconomic levels in the city of Trabzon. Expert opinion was consulted for the face validity and content validity. Exploratory factor analysis was performed for construct validity. The factor analysis conducted revealed a four-factor structure consisting of 21 items, which explained 45% of the total variance. Cronbach Alpha internal consistency coefficients were computed for the reliability of the scale. The internal consistency coefficient of the scale was found as .85. The obtained values showed that the psychometric properties of the scale were within acceptable limits.

In this study, which examined the relationship between computer game addiction and automatic thoughts and narcissism in children, the Cronbach alpha reliability coefficient of the Computer Game Addiction Scale for Children was calculated as .82.

Childhood Narcissism Scale. Validity and reliability studies of the Turkish version of the Childhood Narcissism Scale (Thomaes et al., 2008) were conducted by Akın et al. (2015). In this context, the study was conducted on 238 primary school students between the ages of nine and 14. The confirmatory factor analysis conducted for the construct validity of the scale revealed that the one-dimensional model was a good fit (x^2=49.88, sd=35, p=0.04920, RMSEA=.042, NFI=.91, IFI=.97, CFI=.97, GFI=.96, SRMR=.050). Internal consistency reliability coefficient of the scale was calculated as .72. It was found that the corrected item total correlations of the scale ranged between .29 and .52. It was concluded from the results of analysis that the Turkish version of the Childhood Narcissism Scale is a valid and reliable measurement tool.

In this study, which examined the relationship between computer game addiction in children and automatic thoughts and narcissism, the Cronbach alpha reliability coefficient was calculated as .77 for the Childhood Narcissism Scale.

Children's Automatic Thoughts Scale. Adaptation to the Turkish of the scale, the original form created by Schniering and Rapee (2002), was conducted by Ergin and Kapçı (2013). 40 items and four factors (social threat, personal failure, hostility, and physical threat) are available in the scale. For each item, the children are expected to consider how often the related item occur in their mind in the last week and to mark one of the "never", "sometimes", "counted frequently", "often" and "always" options. The scores that can be obtained from the scale range between 0-160. Higher scores indicate an increase in negative automatic thoughts. Validity and reliability results of the scale indicate that the four-factor model of the proposed original form is compatible with the data (GFI=.90, IFI= .95, CFI=.95, NFI= .92, NNFI=.95, RFI=.91, RMR=.06 and RMSEA=.07). The internal consistency of the scale was evaluated using Cronbach alpha which was found as .94. Personal failure factor explains 8.32% of variance, physical threat factor explains 5.10% of variance, social threat factor explains 31.72% of variance, and hostility factor explains 5.80% of variance.

In the study, which examined the relationship between computer game addiction in children and automatic thoughts and narcissism, the Cronbach alpha reliability coefficient was found as .91 for the Children's Automatic Thoughts Scale.

Data Analysis

Several data analyses were conducted to investigate the relationships between automatic thoughts, narcissism and computer game addiction in children. Preliminary analyses, including normality assumption, observed scale characteristics, and correlation analysis, were performed. Skewness and kurtosis scores and their cut-of values were utilized for normality assumption. Pearson correlation analysis was used to investigate the relationships between the variables.

Examining the preliminary analysis, the structural equation model (SEM) was utilized to test the structure formed by the variables as a whole. The results of the analyses were assessed using common data–model fit indices and their cut–scores: comparative fit index (CFI) values between .90 and .95 emphasize good data–model fit, while values ≥. 95 were accepted a close data–model fit; the root mean square error of approximation (RMSEA; with 90% confidence interval) values between .05 and .08 were viewed as a good data–model fit, whereas the values ≤ .05 were categorized as a close data–model fit (Hooper et al., 2008; Byrne, 2010; Meydan & Şeşen, 2015). SPSS version 18 and AMOS version 24 were applied for analyses.

RESULTS

Preliminary Analyses

As presented in Table 1 findings of the preliminary analyses stated that skewness and kurtosis scores were between -.732 and 1.99 (skewness and kurtosis scores < |2|), suggesting that all variables of the study were relatively normally distributed (George & Mallery, 2010).

Table 1. Observed scale characteristics and correlation results

Scale	1	2	3	4	5	6	7	8	9
1.Factor 1	1								
2.Factor 2	.49***	1							
3.Factor 3	.42***	.23***	1						
4.Factor 4	.24***	.40***	.20***	1					
5. Social Threat	.24***	.27***	.20***	.23***	1				
6. Personal Failure	.28***	.27***	.15**	.21***	.63***	1			
7. Hostility	.53***	.43***	.22***	.25***	.52***	.46***	1		
8. Physical Threat	.44***	.34***	.22***	.23***	.68***	.60***	.61***	1	
9. Narcissism	.32***	.38***	.12*	.23***	.24***	.24***	.47***	.27***	1
Mean	6.29	6.63	3.67	7.70	4.17	4.00	8.26	5.31	9.20
Standard Deviation	6.35	2.81	1.09	3.55	4.83	4.57	.61	5.36	6.03
Skewness	1.40	1.20	1.61	.94	1.52	1.50	.66	1.40	.28
Kurtosis	1.63	1.10	1.78	.34	1.77	1.81	-.36	1.99	-.73

*Note. *p<.05, **p<.01, ***p<.001*

There are significant positive relations between sub-dimensions of computer game addiction in children (factor 1: Inability to stop playing games on the computer and being uncomfortable when prevented, factor 2: Dreaming of playing computer games and associating it with real life, factor 3: Disrupting tasks due to playing computer games, factor 4: Preferring playing video games to other activities) and the sub-dimensions of automatic thoughts (social threat, personal failure, hostility, physical threat) and narcissism. In this context, there are moderate level relations between factor 1 (inability to give up playing computer games and being uncomfortable when blocked) and factor 2 (r = .49, p <0.001), factor 3 (r = .42, p <0.001), hostility (r = .53, p <0.001), physical threat (r = .44, p <0.001), and narcissism (r = .32, p <0.001), and low level of positive significant relationships between factor 1 and factor 4 (r = .24, p <0.001), personal failure (r = .28). , p <0.001) and social threat (r = .24, p <0.001).   It was found that there is a low-level relationship between factor 2 (living the computer game in imagination and associating it with real life) and factor 3 (r = .23, p <0.001), social threat (r = .27, p <0.001), personal failure (r = .27, p <0.001) and moderate level positive relationships between factor 2 and factor 4 (r = .40, p <0.001), hostility (r = .43, p <0.001), physical threat (r = .34, p <0.001), and narcissism (r =. 38, p <0.001). It was found that there are low-level relationships between factor 3 (disrupting tasks due to playing computer games), and factor 4 (r = .20, p <0.001), social threat (r = .20, p <0.001) personal failure (r = .15, p <0.01), hostility (r = .22, p <0.001), physical threat (r = .22, p <0.001), narcissism (r = .12, p <0.05). There are low-level relationships between factor 4 (preferring playing computer games to other activities) and social threat (r = .24, p <0.001), personal failure (r = .21, p <0.001), hostility (r = .25, p <0.001), physical threat (r = .23, p <0.001) and narcissism (r = .23, p <0.001). There are moderate level relations between social threat and personal failure (r = .63, p <0.001), hostility (r = .52, p <0.001) and physical threat (r = .68, p <0.001), a low-level relationship with narcissism (r= .24, p<0.001). There is a moderate relationship between personal failure and hostility (r = .46, p <0.001) and physical threat (r = .60, p <0.001), and a low level positive significant relationship with narcissism (r= .24, p<0.001). A moderate positive significant relationship was found between hostility and physical threat (r = .61, p <0.001) and narcissism (r = .47, p <0.001). In addition, there is a low level positive significant relationship between physical threat and narcissism (r = .27, p <0.001). Observed scale characteristics and correlation results are presented in Table 1.

Structural Equation Modeling

In the structural equation model, which examined the relationship between computer game addiction and automatic thoughts and narcissism in children, the Computer Game Addiction Scale for Children, the Automatic Thoughts Scale of Children and Narcissism Scale for Children were used as the observed variables. Narcissism, automatic thoughts and computer game addiction were latent variables. As a result of the proposed modifications, analyses were carried out by making covariances between the error terms. The fit indexes of the model created between computer game addiction and automatic thoughts and narcissism in children obtained by analysis are presented in Table 2. Accordingly, $\chi 2$ / df = 2.392, p <.000, GFI = .90, CFI = .90, RMSEA = .07, SRMR = .07 values were obtained. It has been observed that all fit index values for the model are within acceptable range (Byrne, 2010; Meydan & Şeşen, 2015). This finding reveals that the model established for the relationship between computer game addiction and automatic thoughts and narcissism in the current study is acceptable.

Table 2. Fit Indices and Values for the Tested Model

Model Fit Indexes	Model Fit Values	Acceptable	Good/Very good
X^2/sd	2.392	$4 \leq X^2/sd \leq 5$	≤ 3
RMSEA	.07	$0.06 \leq RMSEA \leq 0.08$	≤ 0.05
GFI	.90	$0,90 \leq GFI \leq 0,94$	$0,95 \leq GFI \leq 1,0$

| CFI | .90 | 0,90≤CFI≤0,94 | 0,95≤CFI≤1,0 |
| SRMR | .07 | 0.06≤CFI≤0.08 | ≤ 0.05 |

Note. RMSEA: Root Mean Square of Approximate Errors, GFI: Goodness of fit index, CFI: Comparative fit index, SRMR: Standardized root residual squares mean

The results obtained from the structural equation model showed that computer game addiction predicted narcissism ($\beta_1 = 0.031$, t = 3.785, p <.001) and automatic thoughts ($\beta_1 = 0.688$, t = 7.300, p <.001). The results revealed that narcissism did not predict automatic thoughts ($\beta_1 = 1.300$, t = 1.088, p> .05). Structural equation model on the relationship between computer game addiction and automatic thoughts and narcissism in children is presented in Table 3 and Figure 1.

Table 3. Structural Equation Model on the Relationship Between Computer Game Addiction and Automatic Thoughts and Narcissism in Children

Predictive Variable	Dependent variable	β_0	β_1	S.E.	t	p
Computer Game Addiction	Narcissism	0.470	0.031	0.008	3.785	***
Computer Game Addiction	Automatic Thoughts	0.634	0.688	0.094	7.300	***
Narcissism	Automatic Thoughts	0.078	1.300	1.194	1.088	0.277

Note. β_0= Standard path coefficient, β_1= Non-standard path coefficient
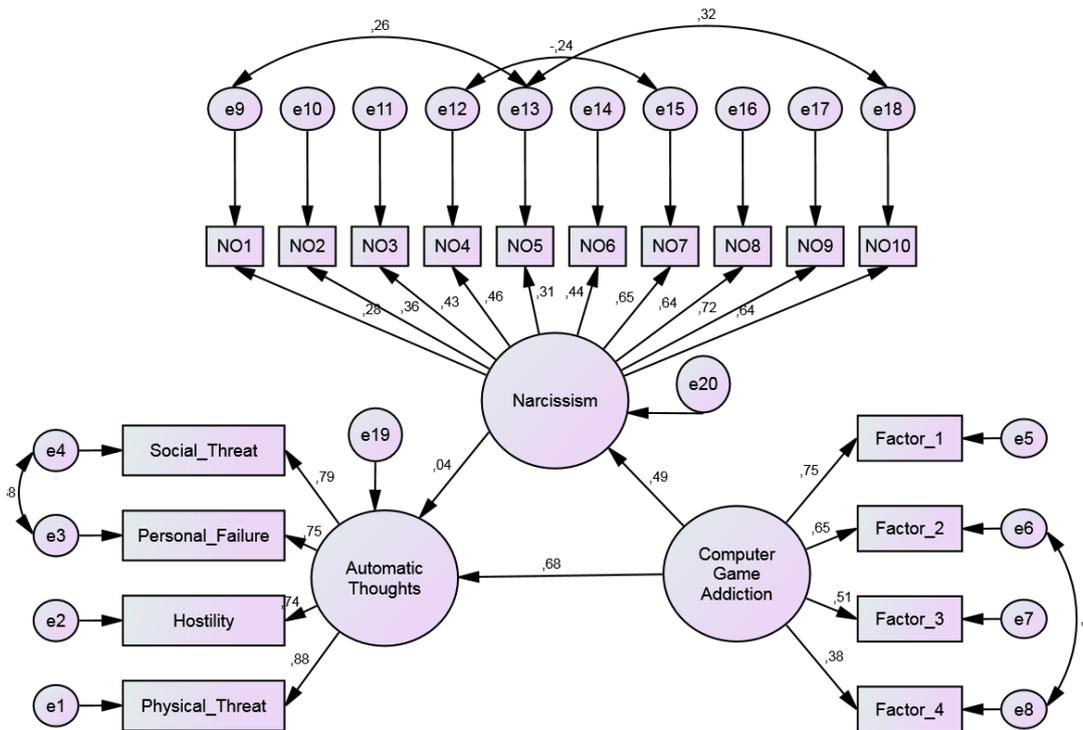

Fig. 1 Structural Equation Model on the Relationship Between Computer Game Addiction and Automatic Thoughts and Narcissism in Children

Accepting the model in the research shows that automatic thoughts and narcissism within this structure are related to computer game addiction. However, since narcissism does not predict automatic thoughts, mediation cannot be claimed. In addition, it was found in the study that computer game addiction positively predicted both narcissism and automatic thoughts. This finding indicates that as computer game addiction increased, narcissism and automatic thoughts also increased.

DISCUSSION

The purpose of this study is to examine the relationship between computer game addiction and automatic thoughts and narcissism in children. For this purpose, a structure model of the relationship between variables was created and tested with the structural equation model. It was found that all fit index values of the tested model were in acceptable range and the model was accepted. In this context, the studies in the literature were reviewed. Basha (2021) examined the association between children's game addiction and personality traits. His aim was to detect how children's game addiction levels differ significantly according to grade level age and gender. As a result of the research, a significant relationship was found between game addiction and tender-mindedness personality traits and neuroticism. Zandi Payam and Mirzaeidoos (2019) found a significant relationship between game addiction and narcissistic personality traits and cognitive discomfort in their study, which aimed to investigate the role of cognitive distortions, parenting style and narcissistic personality traits in

games. Similarly, in the related literature, there are studies reporting that computer game addiction damages the prefrontal cortex (Mori et al., 2015) by causing lack of empathy (Bartholow et al., 2005), problems in social relations (Liu & Chang, 2016), and significant differences in the structural features of the brain (Han et al., 2012), and it is associated with narcissistic personality traits (Kim et al., 2008). We can claim that these findings are consistent with those obtained from this research.

The findings of the present study indicates that there is a positive significant difference between all sub-dimensions of computer game addiction (inability to stop playing games on a computer and being uncomfortable when blocked, keeping the computer game alive and associating it with real life, disrupting tasks due to playing computer games, preferring playing computer games to other activities) and narcissism. In addition, the findings obtained from the structural equation model revealed that computer game addiction positively predicted narcissism. Kim et al. (2008) aimed to examine the relationship between aggression, self-control and narcissistic personality traits, which are known as psychological traits associated with populations at risk of game addiction. In their study, they found that game addiction and narcissistic personality traits were positively related. Nawaz et al. (2020) found a significant relationship between game addiction and social isolation and narcissistic tendencies in the study they aimed to examine the association between PUBG game addiction and narcissistic tendencies and social isolation in players. Pantic et al., (2017) found a positive relationship between internet addiction and narcissism in their study in which the existence and strength of the relationship between internet addiction, self-esteem and narcissism among students were tested. Besides, Wang et al. (2015) revealed in their study that there is a significant difference between addictive behaviors related to online activities and personality traits. These findings in the related literature are in agreement with the findings of the current study.

According to the results of this study, there is a significant relationship between sub-dimensions of computer game addiction and sub-dimensions of automatic thoughts (social threat, personal failure, hostility, physical threat). The acceptance of the model obtained as a result of the structural equation model fit index values also supports this finding. In addition, it was concluded from the study results that computer game addiction predicted automatic thoughts positively. Öztürk and Sarıkaya (2021) conducted their research to determine the serial mediator effect of negative automatic thoughts and self-regulation on the relationship between secondary school students' reasoning skills and video game addiction. In their study, they found that there was a significant relationship between reasoning and self-regulation, and between video game addiction and automatic thoughts. Şahan and Eraslan Çapan (2017), in their study examining the relationship between cognitive distortions associated with interpersonal relationships, social anxiety levels and problematic internet use, found that adolescents' cognitive distortions associated with problematic internet use and interpersonal relationships differ significantly according to the gender variable. Hazar and Ekici (2021), in their study examining the relationship between game addiction and bullying cognition of secondary school students, concluded that there was a positive and significant relationship between game addiction and bullying cognition. In addition, there are studies in the literature that there is a significant relationship between dysfunctional attitudes, which have a positive relationship with automatic thoughts, and game addiction (Iancu et al., 2015; Şoflău & David, 2017). These findings in the literature are coherent with the results of the current research.

The current study emhasized a positive significant relationship between narcissism and automatic thoughts sub-dimensions. Despite theoretical models in related studies, it has been noticed that this relationship has not been examined yet (Beck et al, 2004). Researchers have found that narcissists may have automatic thoughts that reflect their excessive competitiveness and need for excellence (Flett et al., 2014; Sherry et al., 2014), tend to think all-or-nothing (Perrotta, 2020), can be guided by automatic thoughts that undermine their adaptive behavior regulation (Lakey et al., 2008).

Moreover, studies have shown that narcissistic individuals can develop thoughts such as imperfection and lack of love (Young et al., 2019). Similarly, significant relationships were found between automatic thoughts and negative self-expression (Schniering & Rapee, 2002). However, it was noticed in the related literature that these two variables show similar results with the variables they are associated with. Studies report significant relationships between narcissism and aggression (Ang & Yusof, 2005; Lobbestael et al., 2014) and self-esteem (Barry et al., 2003). Similarly, significant relationships were found between automatic thoughts and aggression (Calvete & Connor-Smith, 2005; Schniering & Rapee, 2004) and self-esteem (Ergin & Kapçı, 2017). The explanations of the researchers for the theoretical models and the results of the studies with similar variables support this finding of the research that reveals the relationship between automatic thoughts and narcissism.

The findings obtained from the research support the hypotheses of the research. On the other hand, it is important that this study, which simultaneously examines the relationship between computer game addiction,

automatic thoughts and narcissism in children, should be supported by new studies. In this context, this research can be conducted with larger and different samples. Possible variables (gender, age, class, etc.) in the related literature that may affect the results can also be included in the research and the findings can be evaluated in different dimensions. This quantitative study can also be carried out with a qualitative design, and the results can be discussed in this framework.

Computer game addiction positively predicts narcissism and automatic thoughts according to the finding of the study. It also indicates that as computer game addiction increases, narcissism and automatic thoughts will increase as well. In this context, while conducting studies on narcissism and automatic thoughts, computer game addiction can be considered as another variable and studies can be planned accordingly. In addition, this study was carried out during the coronavirus (COVID-19) epidemic period. It is possible to claim that staying at home and quarantines have greatly increased participation in computer games. This can pose risks, particularly for some vulnerable individuals (King et al., 2020). Therefore, mental health professionals need to create safe social interaction alternatives, particularly for children and adolescents at risk of gaming disorders (Ko & Yen, 2020). In this context, experts and psychological counselors working with children can benefit from the findings of this study, plan individual or group-based studies, and conduct psychoeducational studies. Experts can conduct awareness studies on the effect of computer games on children. In order to prevent computer game addiction as well as benefit from the benefits of computer games, families can limit their children's playing time instead of completely removing them from their routines. Government policies can encourage the use of games in a non-addictive way and make the necessary controls and restrictions.

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