Original Article / Araştırma Makalesi

VALIDITY AND RELIABILITY STUDY OF THE TURKISH ADAPTATION OF THE DIGITAL ADDICTION SCALE FOR TEENAGERS (DAST)

Gençler için Dijital Bağımlılık Ölçeğinin Türkçe'ye Uyarlanması Geçerlik ve Güvenirlik Çalışması

Osman Tayyar ÇELİK[1]   *Yunus TUNÇ[2]*   *Burcu CANDEMİR[3]*   *BETÜL KAPKIN İÇEN[4]*

Davut AÇAR[5]

[1]*Inonu University, Faculty of Health Sciences, Malatya*
[2]*Iğdır University, Vocational School of Health Services, Iğdır*
[3]*Mus Alparslan University, Vocational School of Health Services, Mus*
[4]*Inonu University, Vocational School of Health Services, Malatya*
[5]*Hakkari University, Vocational School of Health Services, Hakkari*

ABSTRACT

The aim of this study is to adapt the "Digital Addiction Scale for Teenagers" developed by Seema, Heidmets, Konstabel and Varik-Maasik (2022) into Turkish. The study was carried out with 599 students studying in secondary and high schools. Within the scope of translation and language validity, firstly, the scale was translated from its original language, English, to Turkish. Afterwards, the Turkish statements were finalized with the consensus of the field and language experts. As a result of the CFA analysis, it was found that the scale had model fit (χ^2/Sd= 128.614/28=4.59; p<.05, CFI=.96; TLI=.95; GFI=.95; SRMR=.036; RMSEA=.079). It was concluded that factor load values varied between .56 and .79, and item-total test correlations varied between .62 and .79. As a result of the correlation analysis conducted for similar scale validity, it was determined that there was a high level of positive relationship between the "Digital Addiction Scale for Teenagers" and the "Digital Game Addiction Scale" at the level of .62 and with the "Internet Addiction Scale" at the level of .79. It was determined that the scale was able to distinguish between the upper and lower 27% groups (p<.05) and Cronbach's alpha reliability coefficient was calculated as .90. According to the validity and reliability analyses, it can be said that the Turkish form of the scale is valid and reliable.

Keywords: Addiction, Adolescents, Digital addiction, Reliability, Validity.

ÖZ

Bu çalışmanın amacı, Seema, Heidmets, Konstabel ve Varik-Maasik (2022) tarafından geliştirilen Gençler için Dijital Bağımlılık Ölçeğini Türkçe' ye uyarlamaktır. Çalışma ortaokul ve lisede öğrenim gören 599 öğrenci ile gerçekleştirilmiştir. Çeviri ve dil geçerliği kapsamında öncelikle ölçeğin orijinal dili olan İngilizceden Türkçe' ye çevirisi yapılarak alan uzmanları ve dil uzmanları tarafından görüş birliğiyle Türkçe ifadelere son hali verilmiştir. Yapılan DFA analizi sonucunda ölçeğin model uyumuna (χ^2/Sd= 128.614/28=4.59; p<.05, CFI=.96; TLI=.95; GFI=.95; SRMR=.036; RMSEA=.079) sahip olduğu görülmüştür. Faktör yük değerlerinin .56 ile .79 arasında değiştiği, madde toplam test korelasyonlarının ise .62 ile .79 arasında değiştiği sonucuna ulaşılmıştır. Benzer ölçek geçerliği için yapılan korelasyon analizi sonucunda Gençler için Dijital Oyun Bağımlılığı Ölçeği ile Dijital Oyun Bağımlılığı ölçeği arasında .62, İnternet Bağımlılığı Ölçeği ile ise .79 düzeyinde pozitif yönlü yüksek düzeyde bir ilişkinin olduğu belirlenmiştir. Ölçeğin %27'lik alt ve üst grupları birbirinden ayırt edebildiği (p<.05) tespit edilirken Cronbach α güvenirlik katsayısı .90 olarak hesaplanmıştır. Yapılan geçerlik ve güvenirlik analizlerine göre ölçeğin Türkçe formunun geçerli ve güvenilir olduğu söylenebilir.

Anahtar kelimeler: Adölesan, Bağımlılık, Dijital bağımlılık, Geçerlik, Güvenirlik.

INTRODUCTION

Prolonged and unconscious use of digital tools and social media networks negatively affects both children and adults mentally and physically. Addiction is foremost among these negative effects. Addiction is the loss of control over the objects they use or the behaviors they do, and the inability to live without these objects or behaviors (Eker, 2016; Kaymal, 2020). In this respect, addiction is categorized in two ways as substance and behavioral addiction. Psychological, behavioral and mental problems arising from the use of the substances such as alcohol and drugs are defined as substance addiction. Behavioral addiction is defined as the type of addiction in which pathological problems (gaming, gambling, TV, internet) are seen like in substance addiction without being addicted to any substance (Gününç & Kayri, 2010; Kesici & Tunç, 2018; Kır & Sulak, 2014, You et al., 2017). There are six criteria for evaluating a behavior as an addiction. These are importance, tolerance, mood change, conflict, withdrawal, and relapse. Importance refers to the vitality of a certain action in terms of life, while mood change refers to the subjective experiences of individuals such as calming down, numbing, escaping as a result of a certain activity. Tolerance involves increasing the frequency or duration of the activity in order to re-experience previously pleasurable behaviors, while withdrawal refers to unpleasant feelings or physical symptoms when the activity is discontinued or immediately stopped, and conflict refers to conflicts within the individual or with the environment. Finally, relapse is the tendency for a particular action to occur again after many years of avoidance or control (Griffiths, 2005).

Due to the digitalization of communication tools and technological developments, excessive and problematic use of social networks has led to the concept of "Digital Addiction", which is a behavioral addiction type (Kâhya Özyirmidokuz & Akpınar Karakaş, 2018). Digital addiction refers to the use of digital devices with problematic features such as excessive, hasty, impulsive, and compulsive (Alrobai, 2018). Digital addiction is a broader concept that includes addictions such as smartphone addiction, computer addiction, social networking addiction, internet addiction, gaming addiction, and social media addiction (Kesici ve Tunç, 2018; Kwon et al., 2013). Digital addiction, social media addiction, smartphone addiction and internet addiction are not classified as mental disorders in The Diagnostic and Statistical Manual of Mental Disorders (DSM-5). However, in the third part of the DSM-5, it defines game addiction as "internet game playing disorder" and recommends further studies on it (APA, 2013; Sarıca Keçeci, Kâhya Özyirmidokuz & Özbakır, 2021).

One reason why internet addiction has not been defined as a mental disorder in the DSM-5 until now is that creating a separate category for internet addiction is likely to open the door to many disorders (iPhone addiction, virtual reality addiction, etc.) as new technologies develop (Pies, 2009). However, in South Korea, video game and internet addiction have been recognized as a disorder and treatment programs have been established since 2007 (Seoul Solution, 2014-2016). Internet addiction and related addictions have been the focus of researchers in many countries. Despite the difference in terminology, it has been determined that excessive internet use negatively affects the well-being of children (Smahel et al., 2020; Vondrackova & Gabrhelik, 2016). As technology evolves, it becomes important to conceptualize, assess and study young people's addiction to digital devices as broadly as possible and should not be limited to internet addiction, addiction to a specific device (computer, smartphone, etc.) or content (games, social media, etc.) (Seema et al., 2022).

Researchers believe that children and young people are at higher risk of using technology intensively because they have not yet developed self-awareness and self-control (Gazzaley & Rosen, 2016). According to research in Korea, the most vulnerable target group for internet addiction is adolescents who lack parental support, have attention deficit/hyperactivity disorder (ADHD) or other psychological disorders, or are struggling in school (Young, 2015). Digital addiction brings along screen addiction. In this context, long-term exposure to the screen can negatively affect the development of children (Arslan et al., 2023). Internet addiction, which is especially noticeable among young people, manifests itself in the form of staying online through online games and social media due to fear of missing out (FOMO) (Przybylski et al., 2013; Tomczyk & Selmanagic Lizde, 2018). Modern digital tools create a temptation to engage in leisure activities and some students cannot resist this temptation during their studies (Lemmens, Valkenburg & Peter, 2014). Tomaszek and Muchacka Cymerman (2020) found a significant but weak relationship between students' school burnout and problematic internet use. Walburg et al. (2016) concluded that Facebook use was effective in the emergence of feelings of exhaustion in girls and inadequacy in boys in the school environment. Peterka Bonetta et al. (2019) found a relationship between internet use disorder, depression and burnout in a study of Chinese and German university students. Salmela Aro et al. (2017), using two longitudinal data from Finnish adolescents, found that school burnout increased due to excessive internet use.

While researchers are focusing on the causes and consequences of digital addiction, scale development studies to measure digital addiction are also continuing (McAlaney et al., 2020;

Shaw & Black, 2008). The "Problematic Internet Use" scale developed by Ceyhan et al. (2007) measured university students' level of internet use, the "Internet Addiction" scale developed by Young (1998) measured adolescents' level of internet addiction, the "Digital Gaming Addiction" scale developed by Lemmens et al. (2009) measured adolescents' problems in digital gaming behaviors, the "Smartphone Addiction" scale developed by Kwon et al. (2013) measured university students' addiction to smartphones, the "Smartphone Addiction Tendency" scale developed by Kim et al. (2014), "Smartphone Addiction Tendency" scale developed by Kim et al. (2014) to measure Korean adolescents' smartphone addiction, "Problematic Mobile Phone Use" scale developed by Bianchi and Phillips (2005) to measure university students' problematic mobile phone use, "Digital Addiction for Children" scale developed by Hawi et al. (2019) to measure the addiction levels of children between the ages of 9-12 to digital devices, and "Digital Addiction" scale developed by Kesici and Tunç (2018) to measure the addiction of young people due to the use of digital tools. Among these, "Internet Addiction" (Bayraktar, 2001), "Digital Game Addiction Scale" (Irmak & Erdoğan, 2015), "Smartphone Addiction Scale" (Demirci et al., 2014), "Problematic Cell Phone Use Scale" (Şar & Işıklar, 2012) were adapted into Turkish. Considering the characteristics of these adapted scales, most of the scales were made to detect problems related to problematic internet use and smart phone and digital games of young people. Since The Diagnostic and Statistical Manual of Mental Disorders-4 (DSM-4) does not mention internet addiction or problematic smartphone use, it can be said that these scales are limited to research purposes only. In this context, it can be said that the scales mentioned above are useful in measuring different types of digital addiction. For this reason, it is necessary to develop measurement tools that cover all addictions such as internet, computer, smartphone, game, Facebook, and behavioral addictions caused by digital software applications and devices that are likely to enter our lives in the future. However, as a result of the literature review, it was understood that there is no scale developed in Turkey to determine the digital addiction levels of both middle and high school students, in other words, adolescents. In this context, the aim of the study was to adapt the "Digital Addiction for Teenagers (DAST)" scale developed by Seema et al. (2022) into Turkish. The scale is a valid, reliable, economical and useful measurement tool that can be used in research in the field of digital addiction, in accordance with DSM-5 criteria. Thanks to this scale adapted to Turkish, it will be possible to measure the addiction arising from the use of digital tools for communication, gaming, shopping, watching movies, etc. with a single scale.

MATERIAL AND METHOD

In order to adapt the Digital Addiction Scale developed by Seema et al. (2022) into Turkish, language validity study was conducted by obtaining the necessary permissions. In the next stage, the draft scale form was applied to the participants in the study group, validity and reliability analyzes were performed and the scale was finalized.

Study Group

The study group of the research consists of 599 students studying at secondary and high schools determined by simple random sampling method. The students participated in the study voluntarily. Information about the participants is presented in Table 1.

Table 1. Information About Participants

Participants		N	%
Gender	Girl	348	58.1
	Boy	251	41.9
Grade Level	5. grade	51	8.5
	6. grade	33	5.5
	7. grade	89	14.9
	8. grade	43	7.2
	9. grade	91	15.2
	10. grade	89	14.9
	11. grade	104	17.4
	12. grade	99	16.5
Mother's education level	Not literate	179	29.9
	Primary school	182	30.4
	Secondary school	114	19.0
	High school	79	13.2
	Bachelor's degree	36	6.0
	Postgraduate	9	1.5
Father's education level	Not literate	61	10.2
	Primary school	188	31.4
	Secondary school	137	22.9
	High school	143	23.9
	Bachelor's degree	57	9.5
	Postgraduate	13	2.2
Family income level	0-5000 tl	275	45.6
	5001-10000 tl	180	30.1
	10001-15000 tl	68	11.4
	15001-20000 tl	40	6.7
	20000 and over	36	6.0
Number of siblings	1 sibling	35	5.8
	2 sibling	77	12.9
	3 sibling	147	24.5
	4 sibling	139	23.2
	5 and over	199	33.2
The device they use	Tablet PC	55	9.2
	Computer	27	4.5
	Telephone	377	62.9
	Computer+telephone	62	10.4
	Tablet PC+ telephone	21	3.5
	Computer + telephone + Tablet PC	25	4.2
Total		**599**	**100**

According to Table 1, 58.1% of the participants were female and 41.9% were male. In addition, 8.5% of the youth continue their education in the 5th grade, 5.5% in the 6th grade, 14.9% in the 7th grade, 7.2% in the 8th grade, 15.2% in the 9th grade, 14.9% in the 10th grade, 17.4% in the 11th grade, and 16.5% in the 12th grade. According to the mother's education level variable; 29.9% are illiterate, 30.4% have primary school, 19.0% secondary school, 13.2% high school, 6.0% university, and 1.5% postgraduate education. According to the education level of the fathers, 10.2% were illiterate, 31.4% were primary school, 19.0% were middle school, 13.2% were high school, 6.0% were university, and 2.2% were graduate students. When the income level of the families is analyzed, it is seen that 5.8% have an income level of 0-5000 TL, 30.1% have an income level of 5001-10000 TL, 11.4% have an income level of 10001-15000 TL, 6.7% have an income level of 15001-20000 TL, and 6% have an income level of 20000 TL and above. 5.8% of the participants had one sibling, 12.9% had two siblings, 24.5% had three siblings, 23.2% had four siblings, and 33.2% had 5 or more siblings. It was determined that 9.2% of these participants used tablets, 4.5% used computers, 62.9% used phones, 10.4% used computers and phones, 3.5% used tablets and phones, and 4.2% used computers, phones and tablets together in the daily life.

Data Collection Tools

In the study, personal information form of children, "Digital Addiction Scale for Teenagers" developed by Seema et al. (2022), "Digital Game Addiction Scale for Children" developed by Şahin, Keskin, and Yurdugül (2019), and "Internet Addiction Scale for Adolescents" developed by Taş (2019) were used as data collection tools. Explanations of the scales are given below.

Digital Addiction Scale for Teenagers

"Digital Addiction Scale for Teenagers" was developed by Seema et al. (2022) to measure the level of digital addiction of young people. The ten-item scale includes statements that describe some ways of using digital devices and related emotions. The original scale is a 7-point Likert scale and in the adaptation study a 5-point Likert scale (never-always) was used. The validity and reliability study of the scale was conducted on two different participant groups in two different time periods. Cronbach's alpha was calculated as .85 for the application during the pandemic and .83 after the pandemic.

Digital Game Addiction Scale for Children

The scale was developed by Şahin, Keskin, and Yurdugül (2019). The scale is a unidimensional scale with 6 items and 5-point Likert type. As the scores obtained from the scale increase, the risk of game addiction increases. The researchers calculated the Cronbach α reliability coefficient of the scale as .78.

Internet Addiction Scale for Adolescents

The 5-point Likert-type scale, consisting of nine items and one dimension, was developed by Taş (2019). The scale was developed in accordance with the diagnostic criteria for online game addiction in DSM-5. High scores on the scale indicate a high level of internet addiction. In the development study, the Cronbach α reliability coefficient of the scale was calculated as .81.

Data Analysis

Confirmatory factor analysis (CFA) and item-total correlation analysis were conducted for the construct validity of the scale. For similar scale validity, the scores obtained from the Digital Gaming Addiction Scale for Children and Internet Addiction Scales for Adolescents and the scores obtained from the Digital Addiction Scale for Adolescents were compared by correlation analysis. In addition, within the scope of criterion validity, the scores of the 27% lower and upper groups were compared. Finally, Cronbach's α reliability coefficient was calculated for reliability.

Ethical Declaration

In order to carry out the study, an application was made to Muş Alparslan University Scientific Research and Publication Ethics Committee and ethics committee approval was obtained on 08.11.2022 with the number 2022/70322.

Findings

In the process of adapting the Digital Addiction Scale for Teenagers into Turkish, the steps recommended by Seçer (2015) for scale adaptation were followed. First of all, the scale was translated and language validity was ensured. In the next step, validity and reliability analyzes were made with the data collected from the participants.

Translation and Language Validity Study

For scale adaptation, the necessary permissions were first obtained from the authors. In the next step, the translation and language validity process steps recommended in the literature

(Savaşır, 1994) were followed. In this context, the scales were first sent to three experts who are proficient in both Turkish and English for translation. In order to evaluate the translations, an expert team of four child development specialists who are proficient in English was formed. The translations of each item of the scale were compared and evaluated by experts. The translations of the articles were approved by consensus. In the next stage, the items that were decided by expert opinion were again submitted to expert opinion for the appropriateness of their English and Turkish equivalents. Finally, the comprehensibility of the Turkish scale expressions was examined by two language experts and the scale, which was accepted to be comprehensible, was made ready for application.

Construct Validity Study

In the literature, it is recommended to conduct CFA instead of exploratory factor analysis (EFA) when adapting validated scales from one language to another language (Seçer, 2015). Although there are different opinions on the adequate sample size for CFA, there is a general consensus that the sample size should be at least 300 (Köklü, Büyüköztürk, & Çokluk, 2015; Tabachnick & Fidell, 2015). In this study, construct validity was conducted with data obtained from 599 participants. Before the analysis, it was also examined whether the data showed a normal distribution. The skewness and kurtosis coefficients of the scale items varied between (-.03; .90) and (-1.51;-.28), respectively. When the skewness and kurtosis values are divided by the standard error of skewness and kurtosis, respectively, being in the range of "± 1.96" is considered as normal distribution (Can, 2014). Therefore, it was accepted that the data were normally distributed. The results of the CFA conducted to determine the construct validity of the Turkish form of the scale are presented in Figure 1.
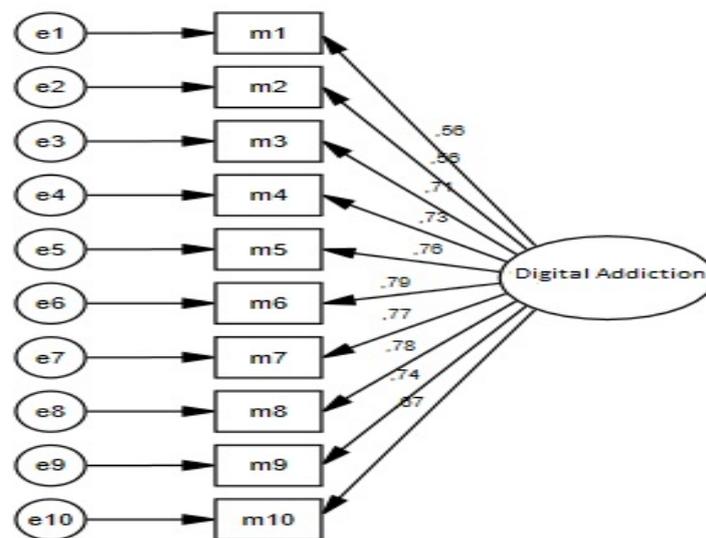

Figure 1. CFA Analysis Results of the Digital Addiction Scale for Teenagers

As a result of the CFA analysis, goodness of fit values were calculated as (χ^2/Sd= 128.614/28=4.59; p<.05, CFI=.96; TLI=.95; GFI=.95; SRMR=.036; RMSEA=.079). Considering the goodness of fit reference values in the literature (Bayram, 2016; Schumacker & Lomax, 2004)), it is seen that χ^2/Sd, SRMR and RMSA values are acceptable and other goodness of fit values have good fit values. The factor loadings of the items in the scale vary between .56 and .79. In the literature, it is recommended that the factor loadings of an item should be at least .30 and above for acceptability (Büyüköztürk, 2012; Seçer, 2015). A high factor loading value of an item indicates that the item has a strong relationship with the structure of the scale (Kline, 1994).

Item-total test correlations were analyzed to determine the relationship between the items and the scale total. The results are presented in Table 2.

Table 2. Item-Total Test Correlation Analysis Results

S.N	Items	Item Total Test Correlations
1	I feel bored if I cannot use my digital device Dijital cihazımı kullanamadığımda sıkılırım	.638**
2	I feel uneasy when I do not know what my friends are saying on social media Sosyal medyada arkadaşlarımın ne konuştuğunu bilmediğimde huzursuz hissederim	.627**
3	I am grumpy if I cannot use digital devices Dijital cihazları kullanamadığımda huysuz/gergin olurum	.760**
4	I end up spending more time using my digital device than initially planned Dijital cihazımla başlangıçta planladığımdan daha fazla vakit geçiririm	.772**
5	As soon as I put my device away, I feel the urge to use it again Dijital cihazımı bırakır bırakmaz tekrar kullanma isteği duyarım	.785**
6	I keep an eye on the digital device even when I talk to someone Biriyle konuşurken bile gözüm dijital cihazımda olur	.794**
7	I use a digital device while eating Yemek yerken dijital cihazımla meşgul olurum	.776**
8	I keep an eye on my digital device during lessons Ders çalışırken bir gözüm dijital cihazımda olur	.784**
9	I play or chat on my device while walking on the street Yolda yürürken dijital cihazımla meşgul (oyun oynama/sohbet vb.) olurum	.762**
10	I play or chat on my device when in bed before falling asleep Uyumadan önce yatağımda dijital cihazımla meşgul (oyun oynama/sohbet vb.) olurum	.731**

**p<.01

When Table 2 is examined, it is seen that the correlations between the scale items and the total score of the scale vary between .62 and .79. Considering these values, it can be said that the scale items have a high correlation with the total score of the scale and therefore there is a strong evidence for construct validity.

In order to determine the similar scale validity; the scores of the participants from the "Digital Game Addiction Scale" and the "Internet Addiction Scale" were compared with "Digital Addiction Scale for Teenagers". The results are presented in Table 3.

Table 3. Correlations Between Scale Total Scores

Scales	1	2	3
1. Digital Addiction Scale for Teenagers	-		
2. Digital Game Addiction Scale	.622**	-	
3. Internet Addiction Scale	.798**	.718**	-

**P<.01

When Table 3 is examined, it is seen that there is a high level of positive relationship between the Digital Game Addiction Scale for Teenagers and the Digital Game Addiction scale at the level of .622 and with the Internet Addiction Scale at the level of .798. Similar scale validity is based on the assumption that scales questioning the same concept or construct show high correlation. Therefore, it can be said that similar scale validity was achieved.

Within the scope of reliability, it was tried to determine the discrimination of the items by comparing the scores of the 27% lower and upper groups. In this context, t-test results are presented in Table 4.

Table 4. T-Test Results of the Lower and Upper 27% Groups of the Digital Addiction Scale For Teenagers

Items	Bottom 27% - Top 27	p
m1	18,07	.00
m2	14,93	.00
m3	26,83	.00
m4	30,67	.00
m5	27,78	.00
m6	22,79	.00
m7	23,29	.00
m8	24,47	.00
m9	23,51	.00
m10	29,00	.00

When Table 4 is examined, it is seen that p values are significant for all items in the scale. These results show that the items can distinguish the groups with high and low scores well from each other, and accordingly, their discrimination is high.

Cronbach's α reliability coefficient was calculated for the reliability of the Digital Addiction Scale for Teenagers. As a result of the calculation, the Cronbach α reliability coefficient of the scale was calculated as .90.

RESULT

In our daily conversations or research reports, it is emphasized that digital tools have an important place in our lives. In other words, today's society is characterized as a digital society. The use of digital devices also points to a paradox (Seema et al., 2022). As a matter of fact, it is possible to see many positive and negative effects in people's lives. Especially for children,

these effects are more evident. For this reason, it can be said that there is a need for valid and reliable measurement tools to be used in research on the use and impact of digital devices. In this context, the aim of the study was to adapt the "Digital Addiction Scale for Young People" developed by Seema et al. (2022) in accordance with DSM criteria into Turkish. The validity and reliability study of the Turkish form of the scale, which consists of ten five-point Likert (never-always) type items, was conducted.

After obtaining the necessary permissions for the adaptation of the scale, translation and language validity studies were conducted. In this context, the English scale form was translated into Turkish by experts following the adaptation steps suggested by Savaşır (1994). In the next stage, the scale translation proposals were examined by both field experts and experts who are fluent in both languages, and the Turkish items were accepted unanimously. Finally, the comprehensibility of the Turkish scale statements was examined by two language experts and the scale, which was accepted to be comprehensible, was made ready for application.

CFA analysis was conducted to examine the construct validity of the scale. As a result of the CFA analysis, a ten-item structure with good fit values ($\chi^2/Sd=128.614/28=4.59$; $p<.05$, CFI= .96; TLI=.95; GFI=.95; SRMR=.036; RMSEA=.079) was obtained. The factor loadings of the items ranged between .56 and .79. Therefore, the structure of the Turkish form of the scale was confirmed. Item-total test correlation analysis was also conducted to examine construct validity. As a result of the analysis, it was concluded that the item-total test correlation was high and the items were compatible with the overall scale. As a result of the correlation analysis conducted within the scope of similar scale validity, it was determined that there was a high level of positive relationship.

Within the scope of the reliability of the scale, the scores of the 27% lower and upper groups were compared and Cronbach α reliability coefficient was calculated. As a result of the research, it was determined that the scale was able to distinguish between individuals with high and low addiction levels. The Cronbach α reliability coefficient of the scale was calculated as .90. Therefore, it can be said that the internal consistency of the scale is high.

The Turkish form of the "Digital Addiction Scale for Young People" developed by Seema et al. (2022) consists of 10 items. The scale has a 5-point Likert-type (never-always) scoring. There are no reverse items in the scale. The higher the scores obtained from the scale, the higher the risk of digital addiction. It can be said that this measurement tool is a valid and reliable measurement tool in determining the digital addiction levels of young people between the ages of 11-19 or studying at the middle and high school level.

REFERENCES

Alrobai, A. A. (2018). Engineering social networks to combat digital addiction: The case of online peer groups. (Doctoral Thesis). Bournemouth University, Department of Philosophy, United Kingdom.

American Psychiatric Association. (2013). American Psychiatric Association: Diagnosti c and Statistical Manual of Mental Disorders, Arlington.

Arslan, R., Pekşen Akça, R., Aydoğdu, F. & Yanık, D. (2023). Çizgi filmlerin ilkokul öğrencileri üzerindeki etkisinin incelenmesi. *İnönü Üniversitesi Sağlık Hizmetleri Meslek Yüksekokulu Dergisi,* 11(1), 1122- 1133. doi: 10.33715/inonusaglik.1231514

Bayraktar, F. (2001). İnternet kullanımının ergen gelişimindeki rolü. (Yüksek Lisans Tezi). Ege Üniversitesi Sosyal Bilimler Enstitüsü, İzmir.

Bayram, N. (2016). *Yapısal eşitlik modellemesine giriş: Amos uygulamaları.* Bursa: Ezgi Kitabevi.

Bianchi, A. & Phillips, J. G. (2005). Psychological predictors of problem mobile phone use. *Journal of Cyberpsychology & Behavior*, 8(1), 39-51.

Büyüköztürk, Ş. (2012). *Sosyal bilimler için veri analiz el kitabı.* Ankara: Pegem Akedemi

Can, A. (2014). *SPSS ile nicel veri analizi*. Ankara: Pegem Akademi Yayıncılık.

Ceyhan, E., Ceyhan, A. A. & Gürcan, A. (2007). Problemli İnternet Kullanımı Ölçeği' nin geçerlik ve güvenirlik çalışmaları. *Kuram ve Uygulamada Eğitim Bilimleri Dergisi,* 7, 387- 416.

Demirci, K., Orhan, H., Demirdas, A., Akpınar, A. & Sert, H. (2014). Validity and reliability of the Turkish Version of the Smartphone Addiction Scale in a younger population. *Bulletin of Clinical Psychopharmacology*, 24(3), 226-234.

Eker, Ö. (2016). Lise öğrencilerinin akıllı telefon bağımlılıkları ile öznel iyi oluşlarının incelenmesi. (Yüksek Lisans Tezi). Nişantaşı Üniversitesi, Sosyal Bilimler Enstitüsü, İstanbul.

Gazzaley, A. & Rosen, L. D. (2016). The distracted mind: Ancient brains in a high-tech world. The Mit Press.

Griffiths M. A. (2005). 'Components' model of addiction within a biopsychosocial framework. *J Subst Use*, 10(4), 191-7.

Gününç, S. & Kayri, M. (2010). The profile of internet dependency in Turkey and development of internet addiction scale: Study of validity & reliability. *Hacettepe University Journal of Education*, 39(39), 220-232.

Hawi, N. S., Samaha, M. & Griffiths, M. D. (2019). The digital addiction scale for children: Development and validation. Cyberpsychology, *Behavior, and Social Networking, 22*(12), 771-778.

Irmak, A. Y. & Erdoğan, S. (2015). Dijital Oyun Bağımlılığı Ölçeği Türkçe formunun geçerliliği ve güvenilirliği. *Anadolu Psikiyatri Dergisi,* 16(1), 10-18. http://dx.doi.org/10.5455/apd.170337.

Kâhya-Özyirmidokuz, E. & Akpınar-Karakaş, B. (2018). Dijital bağımlılık ile mücadelede sosyal bilişimin rolü. İlter K (Ed.). 5th International Management Information Systems Conference içinde (pp.90-93). IMISC, Ankara.

Kaymal, B. (2020). Okul öncesi öğretmenlerinin dijital bağımlılıklarının incelenmesi. (Yüksek lisans tezi). YILDIZ Teknik Üniversitesi ve İstanbul Aydın Üniversitesi Lisansüstü Eğitim ve Sosyal Bilimler Enstitülerinin Ortak Yürüttüğü Eğitim Programları Ve Öğretim Anabilim Dalı, İstanbul.

Kesici, A. & Tunç, N. F. (2018). The development of the digital addiction scale for the university students: Reliability and validity study. *Universal Journal of Educational Research*, 6(1), 91–98. https:// doi.org/10.13189/ujer.2018.060108.

Kır, İ. & Sulak, Ş. (2014). Determining internet addiction level of faculty of education students. *Electronic Journal of Social Sciences, 13*(51), 150-167.

Kim, D., Lee, Y., Lee, J., Nam, J. K. & Chung, Y. (2014). Development of Korean smartphone addiction proneness scale for youth. *PLOS ONE,* 9(5), 1-7.

Kline P. (1994) *An easy guide to factor analysis*. Routledge, London.

Köklü, N., Büyüköztürk, Ş. & Çokluk-Bökeoğlu, Ö. (2015). *Sosyal bilimler için istatistik*. Ankara: Pegem A Yayıncılık.

Kwon, M., Kim, D.-J., Cho, H. & Yang, S. (2013). The smartphone addiction scale: development and validation of a short version for adolescents. *PLoS One*, 8(12), e83558. https://doi.org/10.1371/journal. pone.0083558.

Kwon, M., Lee, J. Y., Won, W. Y., Park, J. W., Min, J. A., Hahn, C., ... Kim, D. J. (2013). Development and validation of a smartphone addiction scale (SAS). *PloS one*, 8(2), e56936.

Lemmens, J. S., Valkenburg P. M. & Peter, J. (2009) Development and validation of a game addiction scale for adolescents. *Media Psychol,* 12(1), 77-95.

Lepp, A., Barkley, J. E. & Karpinski, A. C. (2014). The relationship between cell phone use, academic performance, anxiety, and Satisfaction with Life in college students. *Computers in Human Behavior*, 31, 343–350. https://doi.org/10.1016/j.chb.2013.10.049.

McAlaney, J., Aldhayan, M., Almourad, M. B., Cham, S. & Ali, R. (2020). Predictors of acceptance and rejection of online peer support groups as a digital wellbeing tool. *In Trends and Innovations in Information Systems and Technologies, 3(8*), 95-107. Springer International Publishing.

Peterka-Bonetta, J., Sindermann, C., Sha, P., Zhou, M. & Montag, C. (2019). The relationship between internet use disorder, depression and burnout among Chinese and German college students. *Addictive Behaviors, 89*, 188–199. https://doi.org/10.1016/j.addbeh.2018.08.011.

Pies, R. (2009). Should DSM-V designate "Internet addiction" a mental disorder?. *Psychiatry (Edgmont), 6*(2), 31.

Przybylski, A. K., Murayama, K., DeHaan, C. R. & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior*, 29, 1814–1848. https://doi.org/10.1016/j.chb.2013.02.014.

Salmela-Aro, K., Upadyaya, K., Hakkarainen, K., Lonka, K., & Alho, K. (2017). The dark side of internet use: Two longitudinal studies of excessive internet use, depressive symptoms, school burnout and engagement among finnish early and late adolescents. *Journal of Youth and Adolescence, 46*(2), 343–357. https://doi.org/10.1007/s10964-016-0494-2.

Sar, A. H. & Işıklar, A. (2012). Adaptation of problem mobile phone use scale to Turkish. *Journal of Human Sciences*, 9(2), 264-275.

Sarıca Keçeci, H., Kahya Özyirmidokuz, E. & Özbakır, L. (2021). Dijital bağımlılık ve fomo, kişilik faktörleri ve mutluluk ile ilişkisi: Üniversite öğrencileri ile bir uygulama. *Bağımlılık Dergisi, 22*(4), 379-394.

Savaşır, I. (1994). Ölçek uyarlamasındaki bazı sorunlar ve çözüm yolları. *Türk Psikoloji Dergisi,* 33(9), 27-32.

Schumacker, R. E. & Lomax, R. G. (2004). *A beginner's guide to structural equation modeling*. Psychology Press.

Seçer, İ. (2015). *Psikolojik test geliştirme ve uyarlama süreci: SPSS ve LISREL uygulamaları*. Ankara: Anı Yayıncılık.

Seema, R., Heidmets, M., Konstabel, K. & Varik-Maasik, E. (2022). Development and Validation of the Digital Addiction Scale for Teenagers (DAST). *Journal of Psychoeducational Assessment, 40*(2), 293–304. https://doi.org/10.1177/07342829211056394.

Seoul Solution (2014-2016). Policies. Youth Internet Addiction Prevention Programs. Woman & Family Policy Affairs Office. https://seoulsolution.kr/en/content/youth-internet-addiction-prevention-programs.

Shaw, M. & Black, D. W. (2008). Internet addiction: Definition, assessment, epidemiology and clinical management. *CNS Drugs*, 22(5), 353-365.

Smahel, D., Machackova, H., Mascheroni, G., Dedkova, L., Staksrud, E., Olafsson, K., …Hasebrink, U. (2020). EU Kids Online 2020: Survey results from 19 countries. EU Kids Online. https://doi.org/10.21953/lse.47fdeqj01ofo.

Şahin, M., Keskin, S. & Yurdugül, H. (2019). Impact of family support and perception of loneliness on game addiction analysis of a mediation and moderation. *International Journal of Game-Based Learning (IJGBL)*, 9(4), 15-30.

Tabachnick, B. & Fidell, L. (2001). *Using multivariate statistics*. Boston: Pearson.

Taş, İ. (2019). Ergenler için internet bağımlılığı ölçeği: geçerlik ve güvenirlik çalışması. *Kırşehir Eğitim Fakültesi Dergisi,* 20(2), 875- 905.

Tomaszek, K. & Muchacka-Cymerman, A. (2020). Examining the relationship between student school burnout and problematic internet use. Educational Sciences: *Theory & Practice,* 20(2), 16–31. https://doi.org/10.12738/jestp.2020.2.002.

Tomczyk, Ł. & Selmanagic-Lizde, E. (2018). Fear of Missing Out (FOMO) among youth in Bosnia and Herzegovina—Scale and selected mechanisms. *Children and Youth Services Review*, *88*, 541-549.

Vondrackova, P. & Gabrhelık, R. (2016). Prevention of internet addiction: A systematic review. *Journal of Behavioral Addictions, 5*(4), 568–579. https://doi.org/10.1556/2006.5.2016.085.

Walburg, V., Mialhes, A. & Moncla, D. (2016). Does school-related burnout influence problematic Facebook use? *Children and Youth Services Review,* 61, 327–331. https://doi.org/10.1016/j.childyouth.2016.01.009.

You, S., Kim, E. & Lee, D. (2017). Virtually real: exploring avatar identification in game addiction among massively multiplayer online role-playing games (MMORPG) players. *Games and Culture, 12*(1), 56-71.

Young, K. (1998). Internet addiction: The emergence of a new clinical disorder. *CyberPsychology & Behavior, 3,* 237- 244.

Young, K. (2015). The evolution of internet addiction disorder. In C. Montag & M. Reuter (Eds.), *Internet addiction: Neuroscientific approaches and therapeutic interventions studies in neuroscience, psychology and behavioural economics*. (pp. 3–20). Springer.