

## Original Article

# The tendency to cyberspace addiction in students: The predictive role of ambivalence over emotional expression and social self-efficacy

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### Abstract

Problems caused by the overuse of cell phones have led to negative consequences in students' everyday life; therefore, the present study was performed to investigate the predictive role of ambivalence over emotional expression and social self-efficacy in relation to cyber addiction tendency in students. The method was descriptive-correlational and the sample consisted of 250 high school students who were studying in Mashhad during the academic year 2020-2021, participated in this research by convenience sampling, through social media by distributing the link of online questionnaire, responded to Sevari Mobile Phone Addiction Scale (MPAS) (2014), Ambivalence over Emotional Expression Questionnaire (1990) and Connolly Adolescent Social Self-Efficacy Scale (SSES) (1989). The data were analyzed using Pearson correlation and multiple regression analysis. The results showed that addiction to cyberspace has a negative relationship with social self-efficacy and a positive relationship with ambivalence over emotional expression. Therefore, psychologists should take necessary actions to reduce the severity of attachment to cyberspace in this vulnerable group of society by teaching them appropriate policies to reduce emotional, cognitive, and social problems in students.

### Keywords

Addiction to cyberspace  
Ambivalence over emotional expression  
Social self-efficacy  
Students

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### Introduction

Cell phones, especially smartphones, are widely used around the world. Compared to traditional cell phones, smartphones have an advantage depending on the methods of using multiple functions (Yang & Wu, 2020). Nowadays, although the proper use of cyberspace has many benefits for everyone, but like everything else has its own issues. The most important one is Internet addiction which has been considered by many experts in various fields of behavioral sciences, social sciences, etc. (Neverkovich et al., 2018). Cell phones are a double-edged sword that facilitate our modern lives and may cause a number of concerns such as problems caused by cellphone overuse or even cell phone addiction, which is defined as the inability to regulate cell phone usage, ultimately leading to negative consequences in daily life (Li, Li, Liu & Wu, 2020). Addiction to cyberspace is a pathological process of using the Internet that causes a mental state and disrupts a person's behavior, and cognitive state (Sadock, Sadock, Kaplan & Sadock's, 2015). Extensive research on cyberspace pathology has

been done by cyberspace and media experts in reliable scientific databases around the world. One of the evident issues in such research is the use of cyberspace beyond the standard and placing the person in different spatial and temporal situations to use the web (Nekane, Gorostiaga, Alonso-Arbiol & Aritzeta, 2016). Evidence has shown that cell phone addiction has been closely associated with many psychological and behavioral disorders such as anxiety, depression, stress, impulsivity, poor sleep quality and maladaptive behavior (Li, et al., 2020), and led to psychological problems such as negative emotions and emotional instability (Azher, et al., 2014).

One of the factors that can lead to students' tendency to overuse cyberspace is the ways in which emotions are expressed in dealing with stressful situations. Ambivalence over emotional expression is defined as the internal tension that a person experiences when confronted with the simultaneous desire to openly express and withhold his/her emotions. According to the theory of personal strivings, humans have an innate need to express emotions, and the act of suppressing emotions can be

problematic. Competitive goals between the inherent need for expression and hesitation in expressing fear of negative reactions can cause psychological distress (Wu, McNeill, & Lu, 2019). Negative emotions such as anger, rage, sadness and grief are also part of our lives, but exposure to these emotions in long-term can cause mental disorders and damage a person's social interactions (Esmaelbeigi Mahani et al., 2020). In previous research, inflexible inhibition of emotion has played an important role in the occurrence of some behavioral disorders such as anxiety (Unjore, 2014) and depression (Cha & Sok, 2014). Nam (2021) showed that men are more at risk than women. Adolescents and people aged 20 to 29 are relatively more likely to experience and commit both types of deviant behavior in cyberspace. The difference between Internet literacy and intelligent literacy based on the type of deviant behavior was also statistically significant. Ataollah, Jafari and Zarrabian (2020) showed that there is a relationship between cyberspace addiction and emotional components. The more emotionally mature people are, the less dependent they become on cyberspace. Ghadampour et al. (2019) showed that there is a significant negative relationship between cyberspace addiction and tendency to high-risk behaviors with emotional self-regulation in high school male students. Also, Mikaili, Ghasemi Nejad, and Molavi (2017) showed the relationship between emotional expression in predicting online self-disclosure in students using social networks.

Another factor that can affect the problematic use of the Internet is social self-efficacy. Self-efficacy refers to a person's personality ability to deal with problems and issues to achieve success (Mitchell et al., 2021). One of the most important aspects of self-efficacy is its social aspect (Datu, Wong, & Rubie-Davies, 2021). Social self-efficacy is a basic belief or ability of an individual to control social situations and leads to an optimistic attitude and positive behavior which of them contribute to effectiveness in social situations (Bandura, 2010). Students with lower social self-efficacy experience more problems in their lives, including feeling alone in life (Gazo et al., 2020). Social self-efficacy strengthens supportive relationships in positive social contexts, and people who evaluate their effective social relationships positively and higher, feel less powerless (Tangney, Baumeister, & Boone, 2004). Verrastro et al. (2021) showed in their research that there is a relationship between empathy and social self-efficacy with problematic Internet use. Yang (2020) showed that a correlation was found between self-efficacy, self-control, and Internet addiction. Also, Dakhili et al., (2021) in their research showed that social skills and self-efficacy have been effective on the rate of Internet addiction. Darasian Salmasi, and Rezakhani (2019) showed the effect of sensation-seeking and self-efficacy on Internet addiction. According to previous research, internet overuse leads to reduces free time with family and friends, reduced psychological well-being, lower self-esteem, reduced mental health, increased loneliness, and depression, impulsivity, sensitivity, and social isolation (Dakhili et

al., 2021). It seems necessary to study the effective factors in the tendency to overuse cell phones. Based on the important role of interpersonal factors in the occurrence of addictive behaviors, in the present study, we sought to answer the question: whether ambivalence over emotional expression and social self-efficacy predicts the tendency to cyber addiction in students?

## Method

### Participants

The current study is a descriptive-correlational research and also in terms of purpose it is an applied one. The population of this study included high school students in Mashhad during the academic year of 2020-2021. The sample was 250 students. The questionnaires were designed online. After identifying the communication channels of Mashhad students, including class groups in Telegram and WhatsApp, and Instagram pages, the online questionnaire was widely distributed. Necessary explanations such as the purpose of the research, how to answer the questions and the importance of volunteers' cooperation in this research were provided in the supplementary text along with the questionnaire. After removing the incomplete cases, 240 answer sheets were obtained. Inclusion criteria included informed consent to participate in the research, first, second and third grades of high school, public schools and also non-repetition of the grade. Exclusion criteria included incomplete the questionnaires by the subjects and their distortion, and also, the unwillingness to continue cooperation in filling out the questionnaires. Ethical considerations of the research are: 1) Introducing ourselves and the objectives of the research, 2) Respecting for the privacy of the subjects (such as name), 3) Observing the principle of confidentiality and data confidentiality, 4) Taking data security seriously, 5) Respecting the freedom of action of subjects for participating or not participating in the research. The data were analyzed using Pearson analysis and multiple regression by SPSS, 23 software. The following instruments were used to collect data.

### Instrument

#### *Mobile Phone Addiction Scale (MPAS):*

Sevari (2014) used some foreign questionnaires and some findings of foreign research to measure the variable of mobile phone addiction. At first, 15 questions were made with their help, and after presenting them to some expert professors in psychological issues, two questions were removed and a preliminary questionnaire consisting of 13 questions was formed. Then, in order to extract the causes of mobile phone addiction, exploratory factor analysis was used. The analysis showed that after twenty-five experimental rotations on the data, 13 questions and three factors were obtained called de-creativity (7 questions), inclination (3 questions), and loneliness (3

questions). Questionnaire questions are scored on a five-point scale from never (1) to most of the time (5). The total reliability of the questionnaire, the de-creativity factor, the inclination factor, and loneliness factor were 0.78, 0.76, and 0.84, respectively. The validity of the questionnaire was assessed and confirmed through confirmatory factor analysis. The reliability of the questionnaire in the present study was obtained 0.85 by Cronbach's alpha method.

### **Ambivalence over Emotional Expression Questionnaire (AEQ):**

This questionnaire was designed by King and Emmons (1990) to investigate the importance of the Ambivalence over Emotional Expression' role in health. The Ambivalence questionnaire has 28 items: items 1 to 16 are related to the subscale of ambivalence in expressing positive emotion and items 17 to 28 are related to ambivalence in expressing negative emotion. The response range to each item varies 5 degrees, from never to always. The scoring method is based on Likert scale. A score of 1 and 5 are assigned to never and always, respectively, and also there is no inverse item, so this scoring method is the same on the whole scale, and the total score of the individual varies from 28 to 140. A higher score indicates ambivalence in expressing higher emotion. In the research of King and Emmons (1990), the validity of convergence was confirmed using correlation with Beck's Depression Inventory ( $r = 0.39$ ) and psychological symptoms ( $r = 0.28$ ). Cronbach's alpha coefficient of the scale and the subscales mentioned were 0.89, 0.87, and 0.77, respectively. Rafieinia et al. (2006) used correlation with Beck's Depression Inventory ( $r = 0.35$ ) and Social Panic ( $r = 0.43$ ) to evaluate the convergence validity of the Ambivalence over Emotional Expression Questionnaire. Based on the significant amount of correlation, the convergence validity was confirmed. In Rafieinia et al.'s (2006) study, using internal consistency and Cronbach's alpha coefficient, its value for the whole scale and subscales of ambivalence in expressing positive emotion and ambivalence in expressing negative emotion were obtained 0.87, 0.83, and 0.77, respectively which is very satisfactory. The reliability of the questionnaire in the present study was obtained 0.81 by Cronbach's alpha method.

### **Social self-efficacy scale (SSES):**

The Adolescent Social Self-Efficacy Scale was developed in 1989 by Connolly to measure adolescent self-efficacy. This scale is a self-report tool that has 25 items. The subject must specify on a 7-point Likert scale how much each of the test items represents his/her personality. The scoring options for the adolescent Social Self-Efficacy Scale are as follows: Impossible = 1, Extremely Hard = 2, Hard = 3, A Little Hard = 4, Easy = 5, A Little Easy = 6, Extremely Easy = 7. The Adolescent Social Self-Efficacy Scale has 5 subscales: social assertiveness (5 items), making friends and Establishing interpersonal intimacy (6 items), and seeking and offering help (3 items). The total score of each subject is between 2 and 4. A higher score indicates the subject's higher level of social self-efficacy. There was a significant positive correlation between the scores of the adolescent social self-efficacy scale and the self-perception profile scale (Harter, 1982). Scores of the social self-efficacy scale for two groups of high school adolescents with social withdrawal scales ( $r = -0.39$ ) and social competence ( $r = 0.23$ ) and also scores of adolescents with physical and mental disorders with scores of social withdrawal scale ( $r = -0.25$ ) was correlated. Grieve and Mahar (2013) also showed that social intelligence can have appropriate psychometric properties for the social self-efficacy scale and in fact, social self-efficacy reflects social intelligence among individuals. the appropriate correlation ( $r = 0.48$ ) between Social intelligence and social self-efficacy indicates the high degree of convergence validity of the social self-efficacy questionnaire. The convergence validity of the adolescent social self-efficacy scale has been confirmed through significant correlation with a number of self-concept ( $r = 0.39$ ) and adjustment ( $r = 0.42$ ) scales (Golmohammad Nezhad Bahrami & Rahimi, 2019). Also, in Rezaee, Mostafaei, and Khanjani (2014), the reliability of the questionnaire was obtained to be 0.75 using Cronbach's alpha reliability coefficient. The reliability of the questionnaire in the present study was 0.89 by Cronbach's alpha method.

## **Results**

The sample consisted of 250 students in Mashhad with a mean age of  $16.47 \pm 0.89$  who were in the age range of 16 to 18 years. Most of the participants with 53.6% ( $n = 134$ ) were boys, and in terms of educational level, the highest frequency with 40.8% ( $n = 102$ ) belonged to the 11th grade.

**Table 1.** Descriptive statistics of research variables

Variables	Mean	Standard deviation	skewness	kurtosis
Addiction to cyberspace	46.22	7.27	-0.54	0.65
Ambivalence over emotional expression	74.26	14.18	-0.91	0.40
Ambivalence in positive emotions	26.71	4.71	-0.84	0.13
Ambivalence in negative emotions	47.55	9.64	-0.76	0.28
Social self-efficacy	95.85	16.26	-0.67	0.36
social assertiveness	18.36	8.13	-0.72	0.27
performing in formal public contexts	19.95	8.58	-0.53	0.35
Participating in social groups	20.17	9.13	-0.50	0.68
making friends and Establishing interpersonal intimacy	26.44	10.34	-0.26	0.09
seeking and offering help	10.66	-0.28	-0.54	-0.11

According to Table 1, the mean scores of the cyberspace addiction variable in terms of respondents and the standard deviation were 46.22 and 7.27, respectively. The mean scores of the ambivalence over emotional expression variable in terms of respondents and the standard deviation were 74.26 and 14.18, respectively, and the mean scores of social self-efficacy and the standard deviation were 95.85 and 16.26, respectively. On the other hand, the amount of skewness observed for

all three variables of cyberspace addiction, ambivalence over emotional expression and social self-efficacy is in the range (2, -2), that is, in terms of skewness, all three variables were normal and their distribution was symmetric. The amount of kurtosis for the variables of cyberspace addiction, ambivalence over emotional expression, and social self-efficacy is also in the range (2, -2). This indicates that the distribution of all three research variables has a normal kurtosis.

**Table 2.** Correlation matrix of research variables

Variables	Addiction to cyberspace	Ambivalence over emotional expression	Social self-efficacy
Addiction to cyberspace	1		
Ambivalence over emotional expression	0.47**	1	
Social self-efficacy	-0.54**	-0.45**	1

According to the correlation matrix table, there was a positive relationship between cyberspace addiction and ambivalence over emotional expression ( $p < 0.01$ ,  $r = 0.47$ ) at a significant level of 99%, and also there was a negative relationship between cyberspace addiction and

social self-efficacy ( $p < 0.01$ ,  $R = 0.45$ ). In what follows, due to the normality of the data, the parametric test of regression analysis is used to evaluate the research hypothesis. The assumptions of regression analysis are presented in Table 3.

**Table 3.** Results of regression analysis in predicting the tendency to cyberspace addiction, based on ambivalence variables over emotional expression and social self-efficacy

Criterion variable	Predictor variable	B	Std	Beta	T	sig	VIF	R	R <sup>2</sup>	F	sig	durbin-watson
tendency to cyberspace addiction	Constant value	12.5	5.13	-	1.89	0.113	-					
	Ambivalence over emotional expression	0.35	0.10	0.21	3.26	0.001	2.38	0.71	0.50	75.44	0.000	1.67
	Social self-efficacy	-0.57	0.07	-0.34	-5.08	0.001	1.15					

According to Table 3, the sum of the correlation between ambivalence over emotional expression and social self-efficacy with the tendency to addiction to cyberspace is equal to 0.71 and the square of the multiple correlation coefficient is equal to 0.50. In fact, ambivalence over emotional expression and social self-efficacy explains 50% of the variance in cyber addiction. Durbin-Watson's statistic was also obtained as 1.67 which rejects the assumption of residual correlation. Because the value of Durbin-Watson in the range of 1.5-2.5 indicates the rejection of the residual correlation. In addition, the value of variance inflation factor (VIF) of the predictor variables is in the range of

1.15 – 2.38, therefore, the multiple non-collinearity of the predictor is also confirmed. As shown in Table 3, the validity of the multiple regression analysis of variance is confirmed. According to the significance level which is equal to 0.001 and is less than five percent, the null hypothesis (no regression relationship) is rejected. Thus, there is a regression relationship between ambivalence over emotional expression and social self-efficacy with the tendency to cyberspace addiction.

Among the research variables, ambivalence over emotional expression with a beta of 0.21 ( $p < 0.01$  and

$T = 3.26$ ) can positively and significantly predict the tendency to cyberspace addiction and also, social self-efficacy with a beta of  $-0.34$  ( $p < 0.01$  and  $T = -5.08$ ) can negatively and significantly predict it. Based on the obtained betas, social self-efficacy has a greater contribution in predicting the tendency to cyberspace addiction.

## Discussion and Conclusion

The purpose of this study was to investigate the role of ambivalence over emotional expression and social self-efficacy in predicting the tendency to cyberspace addiction in students. The results showed that ambivalence over emotional expression and social self-efficacy is able to predict the tendency to addiction to cyberspace. The results showed that there is a positive and significant relationship between ambivalence over emotional expression and the tendency to cyberspace addiction. In other words, dimensions of ambivalence over emotional expression play a role in predicting cyberspace addiction. These results are consistent with the results of [Nam \(2021\)](#), [Ataollah et al. \(2020\)](#), [Ghadampour et al. \(2019\)](#) and [Mikaili et al. \(2017\)](#). [Nam \(2021\)](#) showed that men are more at risk than women. Adolescents and people aged 20 to 29 are relatively more likely to experience and commit both types of deviant behavior in cyberspace. The difference in Internet literacy and intelligent literacy based on the type of deviant behavior was all statistically significant. Although there was no significant difference in loneliness or anxiety in the group, but depression and self-esteem were statistically different between the four groups. Emotions are not one-dimensional phenomena, but go through multiple paths of emotional experiences and expression and lead to more self-regulation and adaptation to different situations ([Cohn et al., 2009](#)). People who have a high ability to express emotion, in different situations and conditions can identify their emotions, recognize them and adapt themselves better to stressful situations; Also, due to their high ability to express emotions, these people have stronger interpersonal relationships in expressing their emotional states with others, and ultimately experience higher mental health ([Parkins, 2012](#)). On the other hand, in the case of chronic repression, deprivation by others, control, and conflict in the expression of emotion, it is more likely that the student's social and emotional functions are impaired, and gradually turn to cyberspace. Payne Yabker and Francis (1996) explained the beneficial effects of emotional disclosure in the inhibition-confrontation approach. They believed that active inhibition, thoughts and emotions and shocks, along with traumatic risks, require physiological work, and as time passed, place an aggregate tension in the body, and increasing vulnerability. When the environment is unfamiliar to the individuals and they have the ability to express positive emotion, they are less likely to reveal themselves in cyberspace. But people who are reckless in expressing emotions or

expressing negative emotions are more likely to continue this behavior in cyberspace.

The results showed that there is a significant negative relationship between social self-efficacy and the tendency to cyberspace addiction. In other words, social self-efficacy plays a role in predicting cyberspace addiction. These results are consistent with the results of [Verrastro et al. \(2021\)](#), [Yang \(2020\)](#), [Dakhili et al. \(2021\)](#) and [Darasian and Rezakhani \(2019\)](#). Based on the above, it can be said that people who have clear, well-defined, coordinated, and almost stable self-efficacy have higher cognitive health, therefore, they are less likely to become dependent on cyberspace. It can also be noted that when faced with undesirable events, people with high self-efficacy show more stability and do not accept negative thoughts about themselves and their abilities. Accordingly, self-efficacy helps them to control themselves ([Dakhili et al., 2021](#)). Self-efficacy plays an important role in coping with challenging life situations and helps people to behave rationally in the face of these challenges. Therefore, people with high self-efficacy view challenging issues as tasks for mastery. They show a strong commitment to their activities and also can quickly overcome their failure. But people with low self-efficacy, instead of facing obstacles, avoid them and unrealistically set high standards for themselves and try to meet extremely high expectations despite their abilities, as a result, they face successive failures and become disappointed ([Darasian & Rezakhani, 2019](#)). Disappointed users may use the Internet as a tool to escape reality and compensate for their failures, so over time they will spend most of their time in cyberspace, leading to Internet dependence.

In general, the findings of the present study showed that ambivalence over emotional expression and social self-efficacy as internal resources are associated with students' tendency to cyberspace addiction. This study showed that more attention should be paid to adolescent psychological resources that tend to addictive behaviors, such as adolescent's ambivalence over emotional expression and their social self-efficacy. According to the authors, the most important limitations of the present study were self-assessment and self-reporting of cell phone addiction behavior. It is possible that the participants did not show a real picture, but we tried to avoid bias in the responses by emphasizing the anonymity of the questionnaire and the confidentiality of the information. It is suggested that this research be performed in other samples such as collegians and other geographical areas. The results of this study can be used by specialists in the fields of education and health of adolescents, psychologists and counselors, social workers, as well as teachers and officials of the education system.

## Disclosure Statement

No potential conflict of interest was reported by the authors.

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