



# Exploring Internet Addiction in Students of the University of Tehran Using a Grounded Theory Approach

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## Abstract

**Background:** The increasing growth and adverse effects of internet addiction have made this disorder a factor underlying all behavioral addictions. The present study aimed to explain the process of internet addiction in students of the University of Tehran.

**Methods:** This qualitative study was conducted based on the grounded theory which is an exploratory research method. The research population included students with internet addiction at the University of Tehran in the academic year 2019-2020. Using purposive sampling and theoretical saturation criteria, 15 students (5 males and 10 females) were selected as the participants in the study. The data were collected through structured interviews with the students.

**Results:** Based on the analysis of the data from the interviews, the factors effective in the formation of internet addiction were classified into 43 primary themes and 14 subcategories that were summarized into 5 main categories including individual factors, family factors, social factors, educational factors, and features of the internet.

**Conclusion:** Students' internet addiction can be attributed to personality factors, psychological disorders, and family factors. The findings of this study provided a clear picture of internet addiction. The results of this study can be useful for psychologists and therapists to better understand this phenomenon and plan strategies for the prevention and treatment of internet addiction.

**Keywords:** Internet addiction, Students, Grounded theory, Purposive sampling, Qualitative interviews

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## Introduction

In recent decades, information and communication technology (ICT) has been introduced and welcomed as a facilitator in educational, research, and management settings (1). However, the increasing access of people to the internet has led to the emergence of a new type of addiction called *internet addiction* (2). In 2013, the Diagnostic and Statistical Manual of Mental Disorders (DSM- IV-TR) introduced internet addiction as an impulse control disorder, and internet addiction was defined as a type of psychological addiction that indicates the need to excessively use the internet (3).

The study by Mousavi confirmed the extreme use of social media and internet addiction among Iranian adolescents and young people (4). One of the factors accounting for young people's willingness to use the internet is simple and risk-free communication with others and free expression of thoughts and feelings (5). Another advantage of the internet is that it provides access to a large quantity of information (6). Internet addiction in students is important because of their age and role in society (7). A study by Motidost Komleh et

al. showed a significant negative relationship between internet addiction and academic motivation (8). Ganji et al also reported a significant negative relationship between internet addiction and academic motivation (9). Students are currently immersed in a sea of internet information but do not know where to reach their goals (6). An in-depth understanding of internet addiction is possible when various aspects of this phenomenon are taken into account. To the best of the researcher's knowledge, no study has provided an in-depth analysis of internet addiction. Thus, the dimensions of this emerging phenomenon are not yet known. Furthermore, there is no local theory to be used for developing an effective treatment for internet addiction. Accordingly, the present study aims to identify the causal, contextual, and intervening conditions underlying the internet and strategies used to treat internet addiction and the consequences of using the strategies. It also aims to develop a local model of students' internet addiction.

## Methods

This qualitative study was conducted based on the



grounded theory. Grounded theory is an inductive and exploratory research method that allows researchers in various fields to formulate a theory instead of relying on their existing theories (10). The main idea of grounded theory is that instead of testing hypotheses, people's verbal reporting of their experiences can be used as data to develop a set of theoretical concepts that best describe the data (11).

The research population included students with internet addiction at the University of Tehran in the academic year 2019-2020. The researcher attended a counseling center and identified and interviewed several students with internet addiction. The inclusion criteria were: (1) Being a student, (2) Obtaining a score above 70 on the Internet Addiction Test (IAT), and (3) Willingness and consent to attend the interview session. The data were saturated by interviewing 15 students who were selected as the participants using purposive sampling. In qualitative research, respondents in the research sample should be selected in such a way as to provide the possibility of collecting the largest and most in-depth data (12).

### **Instruments**

The following instruments were used in this study to collect the data:

*Young Internet Addiction Test:* The test was developed by Kimberly Young (1998) to measure internet addiction among adults and students and has high discriminant power. It was designed to measure the extent and severity of internet use based on clinical experience and contains 20 items on a 5-point Likert scale. Alavi et al reported the Cronbach's alpha coefficient for the whole test was equal to 0.88 and the internal validity of the questionnaire was 0.82 using the split-half method. Besides, its external validity was 0.82 using the test-retest method (13). Zandipayam et al reported the internal consistency of the test using Cronbach's alpha as equal to 0.92, which indicates the high internal consistency of the instrument (14). The total score on the test is measured as the sum of the scores of individual items and ranges from 20 to 100, with higher scores indicating higher internet addiction, and vice versa. A score of 20 to 39 indicates normal internet use, a score of 40 to 69 shows mild internet addiction, and a score of 70 to 100 indicates severe internet addiction (15).

*Structured interviews:* The data were collected through structured interviews with the participants. Before conducting the interviews, the researcher tried to gain the participants' trust and obtained their consent to record their voices using a tape recorder. The interview with each participant lasted approximately 45 to 60 minutes. The main research question was: What is the process of internet addiction in students of the University of Tehran? To answer this question, field data were collected

using structured exploratory interviews. After each interview, its content was transcribed word by word. The transcripts were then read several times to understand a general impression of the participants' statements. In the next step, the meaning units including the sentences or paragraphs with a similar meaning were identified and the initial codes were extracted from them. The similar codes were then merged into categories that were at different levels of abstraction (16).

## **Results**

### **Qualitative data analysis**

Data collection continues until the data are saturated, i.e. no new information is obtained upon collecting additional data. Coding is a systematic procedure developed by Strauss and Corbin (1990) to discover the categories, characteristics, and structure of data. In this study, a theoretical model was developed by coding the collected data to explain the phenomenon of internet addiction.

According to Strauss and Corbin (1990), open coding and axial coding are not two consecutive steps of an analytical process rather the coding process is dynamic and floating. At the beginning of the coding process, an attempt is made to identify the categories through open coding, and during the axial coding, the categories are linked to each other. After the relationship between categories is identified through open and axial coding, the extracted categories, subcategories, and their relationships are integrated through selective coding to develop a theoretical model.

### **Causal conditions**

The participants described the phenomenon of internet addiction in response to questions related to each of the dimensions of the paradigmatic model. For example: What do you think the benefits of using the internet have been for you? What is your main reason for using the internet?

The initial codes were extracted via the analysis of the participants' statements and experiences. In the next step, the codes commonly highlighted by all participants, as well as the codes that were considered important by the researcher were identified as the final codes along with their sources. Analysis of the participants' responses to questions about the causal conditions of internet addiction revealed 26 primary themes, 5 subcategories, and 1 axial category.

### **Contextual conditions**

Several codes were extracted from the participants' statements and their responses to questions about the contextual conditions of internet addiction: Can you give an example? Can you explain? How are your relationships with your family members? Could you

please explain? In the next step, the extracted codes were refined and the most important codes accounting for contextual conditions were identified. The contextual conditions were explained through 10 primary themes, 4 subcategories, and 1 axial category.

### **Intervening conditions**

The participants responded to questions about the intervening conditions of internet addiction. For example: What is the role of the internet in bridging communication and emotional gaps? What things can increase the desire or stimulate the use of the internet? What do you usually do with your temptations to use the internet?

Furthermore, the extracted codes were refined and the most important codes accounting for intervening conditions were identified. The intervening conditions covered 7 primary themes, 5 subcategories, and 3 axial categories.

As can be seen in Table 1, factors affecting the emergence of internet addiction were explained by 43 primary themes and 14 subcategories and were summarized into 5 main categories including individual factors, family factors, social factors, educational factors, and features of the internet:

### **Strategies and actions**

Some questions sought to elicit the participants' opinions about the strategies and actions that can be adopted to reduce the use of the internet. For example: What strategies do you think are effective in reducing the use of the internet? What is the best alternative to reduce the use of the internet? What do you think is the best way to control your internet usage? During the data collection process, some codes were extracted from the participants' significant statements. Then, the extracted codes were refined into 18 primary themes. In the next step, the identified themes were condensed into 6 subcategories and 1 main category accounting for strategies to reduce the use of the internet as shown in Table 2.

### **Outcomes**

The participants provided answers to questions about the consequences of strategies adopted to reduce internet use. For example: What are the outcomes of controlling or using the internet optimally? During the data collection process, some codes were extracted from the participants' significant statements. Then, the extracted codes were refined into 13 primary themes. In the next step, using axial coding, the identified themes were condensed into 6 subcategories and 1 main category accounting for the outcomes of the adopted strategies as shown in Table 3.

### **Model development**

Strauss and Corbin (1990) developed a paradigm that

helps the researcher think about data regularly and link them together. To explain students' internet addiction, the paradigmatic model proposed by Strauss and Corbin is presented in this section:

1. Causal conditions include categories and conditions that affect the phenomenon under study (internet addiction). Causal conditions in this study refer to individual factors that cover 5 subcategories (defective life skills, communication with others, fun and entertainment, personality traits, and psychological disorders and problems).
2. Contextual or environmental conditions describe the specific conditions that affect strategies. Contextual conditions are a set of conditions that together create a set of conditions and phenomena or problems at a particular time and place and individuals respond to them using their own strategies. Contextual or underlying conditions originate from causal conditions. Contextual environmental factors that affect the strategies used are the same family factors that are considered as both underlying and continuing factors of this behavior and can affect people's strategies to reduce the use of the internet. Thus, family conditions were considered as a subset of contextual conditions in this study.
3. The core category in this study was the phenomenon under study (internet addiction).
4. Intervening (mediating) conditions refer to the general environmental conditions that affect the strategies adopted. These intervening conditions arise from unexpected and incidental situations that need to be addressed strategically. The social problems, peer role, educational system, convenience, and internet attractiveness were considered as intervening or mediating conditions in this study.
5. Strategies are specific actions that are related to the main phenomenon and refer to the strategies that people adopt to deal with a problem.
6. Outcomes refer to the results obtained from the application of strategies. In fact, outcomes show the effectiveness of the strategies adopted by the internet users in this study and their consequences.

After developing the paradigmatic model, it was validated. To this end, the model was evaluated by several experts who were familiar with the phenomenon of internet addiction and the grounded theory. The model was revised based on the feedback provided by the experts through a reciprocating process as shown in Figure 1.

### **Discussion**

The outcome of the grounded theory approach is a conceptual model. Studies that are conducted following this approach are valid only when the researcher provides an accurate and coherent conceptual model of the subject in question based on the research findings. In the

**Table 1.** The themes and categories accounting for factors underlying the formation of internet addiction

Themes	Subcategories	Main categories	Factors
Social skills, problem-solving skills, academic problems, avoidance	Defective life skills	Individual factors	Causal conditions
People of the opposite sex, friends	Communication with others		
Spending time, having fun	Fun and entertainment		
Poor self-efficacy, neuroticism, self-centeredness, emotional repression, aggression and irritability, introversion/extroversion, openness to experience, poor self-control, lack of purposefulness and planning	Personality traits		
Exam anxiety, loneliness, maladaptive cognitions, depression, attention-deficit/hyperactivity disorder, social anxiety, feelings of emptiness, fear of failure, obsessive-compulsive disorder	Psychological disorders and problems		
The father's absence, conflict and disagreement with the parents	The parents' marital problems	Family factors	Contextual conditions
Parental perfectionism, parental aggression	Parents' personality traits and psychological disorders		
Parental dominance, lack of intimacy, low parental tolerance, blaming parents, strict rules	Authoritarian parenting style		
Access	Neglect and inattention		
Poor communication	Social problems	Social factors	Intervening conditions
Fitting in with peers	Peer role	Educational factors	
Educational applications	Educational system		
Ease of use, anonymity	Convenience	Features of the internet	
Being updated, Access to information about others	Internet attractiveness		

**Table 2.** The themes and categories showing the strategies to reduce the use of the internet

Themes	Subcategories	Main category
Planning	Personal discipline	Strategies
Seeking advice and help from family members for time management, seeing a counselor and psychologist, getting help from others	Seeking advice/help	
Purposiveness	Far-sightedness	
Distraction	Thought control	
Staying away from mobile phones, leaving social media, not buying internet services, turning off mobile phone and Wi-Fi	Restricting internet access	
Study, work and hobbies, enrolling in educational courses, watching TV, playing sports, having fun and going out with friends, spending time with family members, interacting with relatives	Alternative activities	

**Table 3.** The themes and categories accounting for the outcomes of the adopted strategies

Themes	Subcategories	Main category
Obtaining higher grades, spending more time studying	Improving academic performance	Outcomes
Reducing physical pain, reducing the feeling of fatigue, regulating sleep patterns, reducing vision problems	Improving physical problems	
More communication with family members	Improving interpersonal relationships	
Mood and clinical symptoms, boredom, depression	Recurrence of psychological disorders	
Watching TV, spending time with friends	Engaging in other activities	
Compensation for outstanding tasks	Improving performance	

selective coding stage, 5 main categories were identified, including individual factors, family factors, social factors, educational factors, and the features of the internet, and strategies and outcomes. This section addresses the relationship between the extracted categories and develops a theory to explain them. Following the findings of the study, it can be concluded that internet addiction is not the main cause of the students' problems. Rather, this disorder itself is the product of conditions that make the

use of the internet a compensatory solution. The students pointed to the role of an authoritarian and controlling parent in the family. Authoritarian and repressive parents increase their children's stress and negative emotions and reduce their self-confidence and self-efficacy. This finding was in line with the findings of a study by Mash and Talmud (15).

The students also reported that they had poor control over behaviors such as eating, watching TV, playing

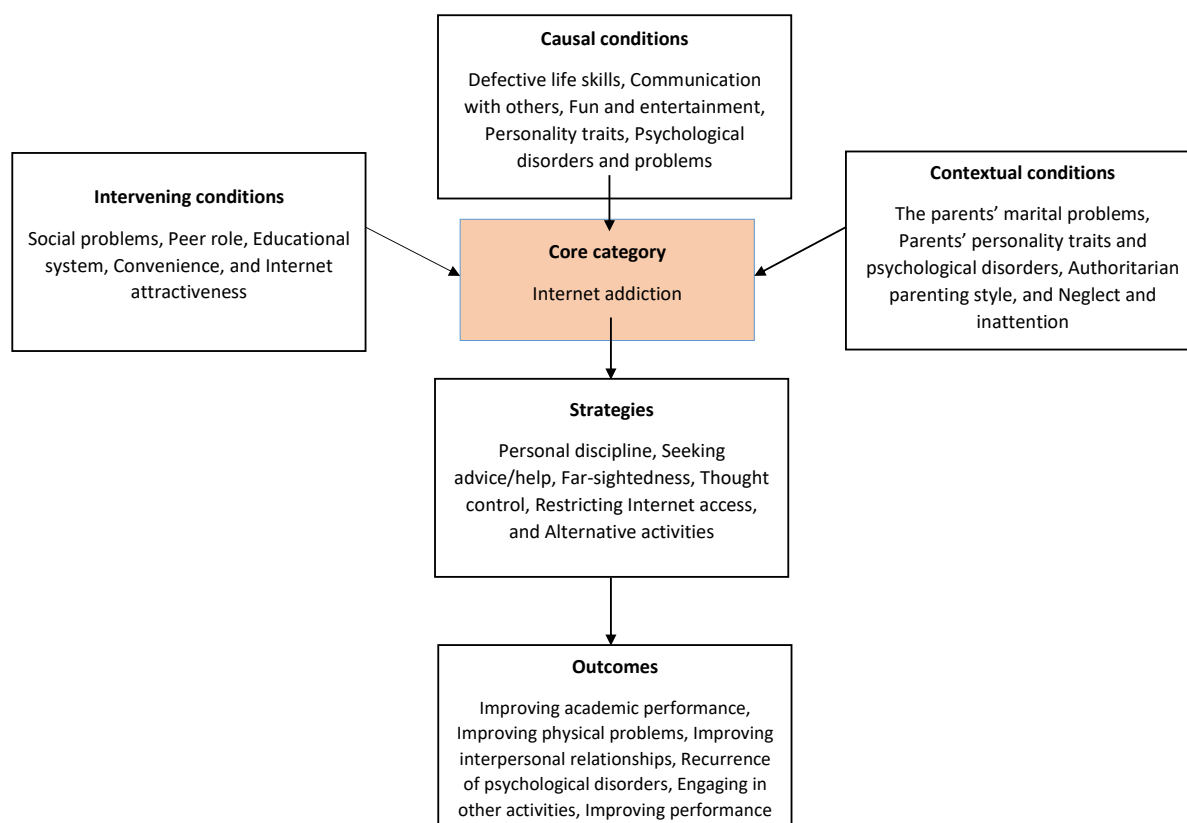


Figure 1. The paradigmatic model of internet addiction

computer games, and being violent toward others. Furthermore, most of the students participating in the present study reported attention-deficit/hyperactivity disorder (ADHD) which resulted in a lack of self-control or self-regulation. This finding was consistent with the results of Rahmati and Saber's study (17). Moreover, according to Mousavimoghadam et al (18), children with ADHD show significant problems in self-control, expressing and regulating their emotions, and recognizing the emotions of others. Therefore, such people, in the face of situations that provoke negative emotions, react by suppressing emotions, as also pointed out by Yildiz (19) as well as Shirazi and Janfaza (20). Furthermore, Pelletier-Baldelli et al (21) reported young people addicted to the internet usually showed emotional processing malfunctioning and had a poorer performance in emotion management than others. According to Wilson, internet addiction is caused by a lack of self-control (22).

The students in the present study also reported that they had poor decision-making skills in the face of life challenges and were increasingly depressed and unmotivated. This finding was consistent with the results of the study by Salicetia (23) on cognitive dysfunction. One of the personality traits of internet-dependent users is psychosis, which is characterized by the creation of depression, fear, stress and constant anxiety, irritability, emotional repression, and poor self-control (15). One of the personality traits reported by the students in the

present study was poor conscientiousness, which can be influenced by parenting style. The experience of failure, along with personality traits and family circumstances, can help the user avoid real-life problems.

Following the findings of this study, a conceptual model of internet addiction was developed as shown in Figure 2. Analysis of the students' experiences indicated that students' dependence on the internet is not the main cause of their lack of motivation, lack of the sense of responsibility, and academic failure, but rather personality factors, psychological disorders, and family factors underlie these problems and their prevention or treatment requires reconstruction or correction of the factors that play a role in formation and persistence of these problems.

Given that before conducting qualitative interviews, informed consent was obtained from the interviewees and sufficient information was provided about the research purpose and procedure, the participants' relative awareness may have affected the analysis of the issues related to internet addiction. Thus, researchers can focus more on the etiology of internet addition and present preventive, educational, and therapeutic strategies.

## Conclusion

Based on the findings of the present research, it can be concluded that internet addiction is the result of a set of



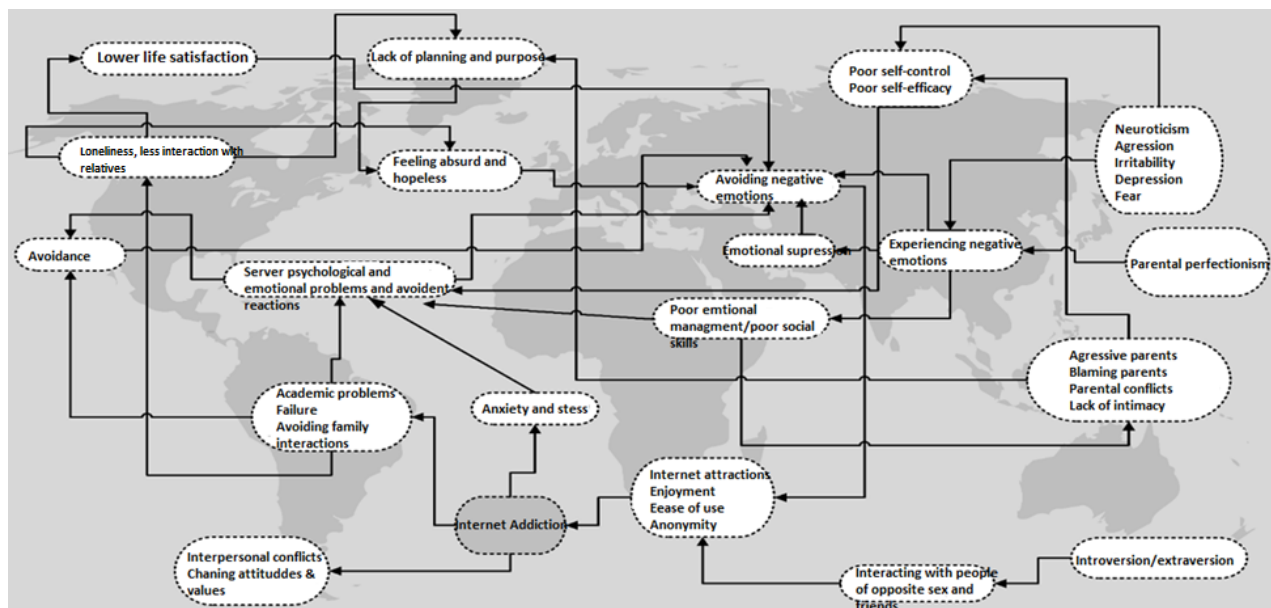


Figure 2. The conceptual model of internet addiction

factors and conditions, and its prevention or treatment requires the reconstruction or modification of the factors that play a role in its formation and continuation. The students' reports showed that individual factors (such as personality traits, emotion regulation and self-control, problem-solving skills, social skills, incompatible beliefs and cognitions, and background or simultaneous disorders) along with family and social factors influence the formation and continuation of students' addiction. Therefore, it is suggested that therapists use theoretical and practical training at the same time in order to prevent and reduce the damage caused by excessive use of and dependence on the internet.

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#### Conflict of Interest

The authors had no conflict of interest in conducting the present study.

#### Ethical Issues

This study was approved by Tehran Islamic Azad University of Medical Sciences under the code of ethics ID:IR:IAU.TMU.REC.1398.151.

#### References

1. Yazdani S, Khoshgoftar Z, Ahmady S, Foroutan SA. Learning in cyberspace: a thematic content analysis in health learning system. *J Qual Res Health Sci*. 2017;6(3):296-309. [Persian].
2. Hajizadeh Meymandi M, Vakili Ghasemabad S, Mirmongereh A. A survey of the relationship between socio-psychological factors and internet addiction (case study: girl students of Yazd university). *Journal of Woman in Culture Arts*. 2016;8(4):473-

92. doi: [10.22059/jwica.2016.61790](https://doi.org/10.22059/jwica.2016.61790). [Persian].

3. Rajaei MS, Heidari H. Relationship between internet addiction and marital satisfaction and disaffection in married students of Islamic Azad University, Khomeini Shahr Branch in 2015. *Community Health Journal*. 2017;11(1):69-77. doi: [10.22123/chj.2018.85346](https://doi.org/10.22123/chj.2018.85346). [Persian].
4. Mousavi SV. Prevalence of internet addiction and the status of the use of virtual social networks in Iranian teenagers and youths in 2018. *J Mil Med*. 2020;22(3):281-8. doi: [10.30491/JMM.22.3.281](https://doi.org/10.30491/JMM.22.3.281). [Persian].
5. Aqba'i Sh, Kakavand A, Bahrami HidChi M. The relationship between depression and cyber addiction mediated by emotional malaise. *Psychological Studies, Faculty of Educational Sciences and Psychology, Al-Zahra University*. 2019;14(1):163-82. [Persian].
6. Aliramezani H, Borhani F, Okhovatti M. Experiences of nursing students in terms of internet information literacy training: a qualitative research. *J Qual Res Health Sci*. 2015;4(1):22-34. [Persian].
7. Abdi M, Rafiee S, Asadi E, Pourrahimi M, Jalilvand H. The relationship between internet addiction and lifestyle among nursing and midwifery students. *Depiction of Health*. 2019;9(4):252-8. [Persian].
8. Motidost Komleh R, Hosseini AF, Fata L, Mirhosseini F, Bigdeli S. Investigating the relationship between internet addiction and academic achievement of medical students (2013). *Iran J Health Saf Environ*. 2016;3(2):528-34. [Persian].
9. Ganji B, Tavakoli S, Baniyadi Shahr-e Babak F, Asadi S. Surveying the relationship between internet addiction and Academic Engagement of students. *Educ Strategy Med Sci*. 2016;9(2):150-5. [Persian].
10. Hosseini SM, Aslani K, Attari YA. Identification of effective conditions on infidelity among married men: a grounded theory study. *J Qual Res Health Sci*. 2019;8(2):44-56. [Persian].
11. Abbasi HR, Hatami Varzaneh A. Investigation of the factors affecting successful treatment of drug abuse with grounded theory approach. *J Qual Res Health Sci*. 2020;8(1):10-21. [Persian].
12. Mokmeli Z. Development of a Comprehensive Psychological Treatment with Local Orientation and Comparing its

- Effectiveness with Cognitive-Behavioral Therapy on the Symptoms and Indicators of Recovery in Patients with Obsessive-Compulsive Disorder [thesis]. Faculty of Educational Sciences and Psychology, University of Isfahan; 2021. p. 127-9. [Persian].
13. Alavi SS, Eslami M, Maracy MR, Najafi M, Jannatifard F, Rezapour H. Psychometric properties of young internet addiction test. *Int J Behav Sci*. 2010;4(3):183-9. [Persian].
  14. Zandipayam A, Davoudi I, Mehrabizadeh Honarmand M. Normalization and Examining Psychometric Properties of Online Game Addiction Inventory-Persian Version. *Iran J Psychiatry Clin Psychol*. 2016;21(4):351-61. [Persian].
  15. Alavi Asil F. Developing and Reviewing the Validity of a New Comprehensive Educational-Therapeutic Package of Psychology with Local Orientation in Order to Reduce Internet Dependence with Emphasis on Improving the Motivation of Treatment and Reducing Cravings [thesis]. Islamic Azad University, Rudehen Branch, Faculty of Psychology and Social Sciences; 2020. p. 312. [Persian].
  16. Vaezi K, Fallahi-Khoshknab M. Spiritual coping against the desire of re-using drug. *J Qual Res Health Sci*. 2017;7(4):449-60. [Persian].
  17. Rahmati F, Saber S. Comparison of cognitive emotion regulation and resiliency in students addicted to the internet and normal students. *J Appl Psychol*. 2017;11(4):579-96. [Persian].
  18. Mousavimoghadam SR, Nouri T, Khodadadi T, Ahmadi A, Ghiasi G. Association of internet addiction and self-control with mental health among students of the university of applied sciences and technology, Ilam city, Iran. *Journal of the School of Health and the Institute of Health Research*. 2017;15(1):1-8. [Persian].
  19. Yildiz MA. Emotion regulation strategies as predictors of internet addiction and smartphone addiction in adolescents. *J Educ Sci Psychol*. 2017;7(1):66-78.
  20. Shirazi M, Janfaza M. The predictive role of difficulties in emotion regulation and self-control with susceptibility to addiction in drug-dependent individuals. *Research on Addiction*. 2015;9(33):57-69. [Persian].
  21. Pelletier-Baldelli A, Ives L, Mittal VA. Increased Internet use and poorer ability to manage emotions in youth at high-risk for psychosis. *Schizophr Res Cogn*. 2015;2(4):220-6. doi: [10.1016/j.scog.2015.08.002](https://doi.org/10.1016/j.scog.2015.08.002).
  22. Ismail AB, Zawahreh N. Self-control and its relationship with the internet addiction among a sample of Najran university students. *J Educ Hum Dev*. 2017;6(2):168-74. doi: [10.15640/jehd.v6n2a18](https://doi.org/10.15640/jehd.v6n2a18).
  23. Salicetia F. Internet addiction disorder (IAD). *Procedia Soc Behav Sci*. 2015;191:1372-6. doi: [10.1016/j.sbspro.2015.04.292](https://doi.org/10.1016/j.sbspro.2015.04.292).

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