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## The relationship between internet addiction and introversion among ninth grade female students of district 3 of Tabriz

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### **Abstract**

**Introduction:** The paper presented aims at studying the relationship between internet addiction and introversion among ninth grade female students of Tabriz, district 3.

**Materials and Methods:** The study is correlational and descriptive. The statistical population consisted of ninth grade female students which were studying in the academic year 2015-16 who were enrolled in public high schools in Tabriz district 3. The population size was equal to 2566 female students and the sample size was equal to 349 participants who were selected. The sampling method was based on multistage cluster random sampling; the data collection method was based on work field and utilized Eysenck personality questionnaire (introversion, extroversion) and 20-question internet addiction test by Young (IAT). Data analyzed by SPSS software and according to correlation and regression method.

**Results:** The findings revealed that the relationship between internet addiction and introversion was significant at 30 percent level of certainty ( $P < 0.0001$ ).

**Conclusion:** The results showed that there is a meaningful relationship between internet addiction and introversion among students.

**Keywords:** Internet addiction, Introversion, Personality

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### **Introduction**

In the past, addiction was only focused on the use of drugs and substances that affect the brain's response. Recently, it has been noticed that a person can achieve the same type of addiction by using the Internet. This disorder is called Internet addiction. Addiction generally means the occurrence of conditions in which people become physically and mentally dependent on a specific type of substance, especially narcotics. Many

researchers use the concept of addiction to justify certain types of suspicious behavior because the signs and findings of addiction are also seen in this state. Non-substance types of addiction are also classified as behavioral addictions, and Internet addiction is also considered a behavioral addiction (1). The opinion that the term addiction is not only for substances and can also exist in other cases (behavioral addiction) was first presented by Pelley (1975). According to Pelley,

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what makes people addicted to a behavior is the pleasant experience of it is the same behavior as it is with chemicals. In Internet addiction, a person becomes addicted not to the substance, but to what he does on the computer or to the feeling he gets while doing it (2). This disorder has been introduced with different titles such as behavioral dependence on the Internet, pathological use of the Internet, problematic use of the Internet, excessive use of the Internet, abuse of the Internet, and Internet addiction disorder (3). Evan Goldberg, a psychiatrist from Columbia University, first proposed the Internet Addiction Disorder in July 1995. Internet addiction or behavioral dependence on the Internet, regardless of whether we consider it a disease or mental injury or a social problem, is a chronic, comprehensive and recurring phenomenon that is associated with serious physical, financial, family, social and psychological injuries. The most common term is "Internet addiction", which creates a kind of behavioral dependence on the Internet and is determined by these characteristics: an increasing cost for the Internet and its related topics, an unpleasant emotional feeling (such as anxiety, depression, etc.) when a person is in No contact with the Internet, the ability to tolerate and get used to the effects of being on the Internet, denial of problematic behaviors from this point of view, the disorder is considered as a stress or impulse control disorder such as pathological gambling, and those who meet this criterion, psychological problems, social and find a job (4).

On the other hand, Yang believes that the word "addict" is also used for Internet addicts because the signs of Internet addiction have the same characteristics as those seen in addiction to substances such as alcohol and cigarettes (5). The American Psychiatric Association defines Internet addiction as a pattern of Internet use that causes functional impairment and is accompanied by unpleasant internal states during a two-month period. (6). Addiction to the Internet is caused by excessive use of other personal and to some extent acquired injuries of the Internet, which is sometimes called as virtual addiction. Internet addiction disorder is an interdisciplinary phenomenon and various medical, computer, sociology, law, ethics and psychology sciences

have investigated each of the different angles of this phenomenon (7).

In Shaw and Black's study, Internet addiction is included in the field of impulse control disorders and includes a person's inability to resist his impulse to engage in a certain behavior despite considering its consequences (8).

According to Holmes, using the Internet for more than 19 hours a week is a sign of Internet addiction, but Yang has set the limit of Internet addiction to 38 hours a week. The problem of Internet addiction can be considered as a social crisis, and currently, it has attracted the opinion of experts in all fields. This phenomenon is a biological, psychological, social, economic and cultural problem, and it is not possible to look at the problem of Internet addiction from only one perspective, but it is influenced by many factors and causes many negative consequences. Factors affecting internet addiction in the types of internet use, connection location, hours of use, level of skill in using and such factors, each of which can be discussed and investigated. Internet addiction has a great negative impact on people, including problems in life, school performance, and parental relationships (9). At the same time that people's relationships with the virtual world increase, on the other hand, the range of their relationships in the real world decreases and the possibility of their academic performance also decreases (10). In Young's studies, 58 percent of students had a significant decrease in study habits, drop in grades, probation and absenteeism. 43% of these good students have faced a lack of success in school due to sleeping late due to using the Internet (11). In 2000, Anderson at Alfred University found that most of the students who had failed in their studies were those with Internet experience (12). Studies have shown that Internet addicts have failed in their lives, careers, studies, and relationships and have been unable to manage time (13-15).

Personality can perhaps be considered the most basic subject of psychology because it is the main focus of discussion in fields such as learning, motivation, perception, thinking, emotions and feelings, intelligence and things like that. When discussing personality, psychologists pay more attention to individual differences than anything else, that is, the characteristics that distinguish one person from another (16). The character is

originally derived from the Latin word *persona* and refers to the mask used by the actors in the play. This concept gradually expanded and included the role played by the actor (17). Therefore, the main and primary concept of character is a formal and social image and is drawn based on the role that a person plays in society. That is, in fact, a person presents to his society a personality based on which the society evaluates him (16).

The term introvert and extrovert was first used by a famous psychiatrist named Carl Jung. Introverted people are those whose reaction to different situations is negative or they run away from these situations and are quiet and calm. On the other hand, extroverted people react positively to situations. Compared to the introvert type, they talk more and have more social contact (18). After Jung, another influential psychologist named Eyseng used the term introversion and extroversion. After years of effort, Eysenck came up with a very influential theory of personality based on three dimensions. These dimensions are combinations of attributes or factors that can be considered as meta-factors. The three dimensions of Eyseng's personality are: 1- extroversion versus introversion 2- neuroticism versus emotional stability 3- psychoticism versus impulse control. which has specified traits for all three personality dimensions, which traits related to extroversion are as follows: sociable, lively, active, bold, thrill-seeking, carefree, dominant, risk-seeker. The closer the characteristics of people are to these traits, the more extroverted they are, and the farther they are from these traits, the more introverted. According to Eysenck, extroverted people are usually social, party-loving, have many friends and thrill-seekers who act impulsively without thinking. An introverted person, contrary to the above characteristics, is a calm, self-absorbed, self-restrained, and thoughtful person who does not trust immediate feelings and prefers a life with rules and regulations to a life based on chance and risk (19). In addition to the differences mentioned, there are other differences between introverts and extroverts as follows:

Introverts are more successful in school. This success is especially evident in more advanced lessons. Similarly, students who drop out for academic reasons are more extroverted, but

people who drop out for psychological reasons are more introverted. 2- Extroverts prefer to spend vacations with others, while introverts spend vacations alone. Extroverts look for change and transformation in their daily work, while introverts do not feel the need for change. 3- Extroverts like rude jokes, while introverts don't like rude jokes, while introverts like enlightened jokes like funny use of words and subtle jokes. 4- Extroverts are more sexually active compared to introverts. 5- Extroverts are more suggestible than introverts. 6- Extroverts, compared to introverts, often choose places to study in the library that provide more external stimuli. 7- Extroverts take more rest time than introverts. 8- When studying, extroverts prefer a noisy and crowded environment. 9- Extroverts are also different from introverts in their reaction to noise (introverts react more to noise) and each of them will perform best if the noise is as much as they want (19).

The American Psychiatric Association intends to classify Internet and computer game addiction as one of the official drug addiction factors because people addicted to the Internet are more socially isolated, and as a result, they are more prone to drug addiction (5). In the fifth and last edition of the Diagnostic and Statistical Manual of Mental Disorders, Internet addiction is an addiction that leads to a functional disorder in a person. This association has provided seven criteria to diagnose Internet addiction; 1- Tolerance, 2- Withdrawal symptoms, 3- Time of Internet use, 4- Continuous desire to control behavior, 5- Spending significant time on Internet-related matters, 6- Reduction of social, occupational and recreational activities due to Internet use, and 7- continuing to use the Internet despite being aware of its negative effects. It is necessary that at least three of the mentioned criteria continue for at least two months in order to diagnose Internet addiction (20).

According to the mentioned materials and the existence of a gap among the conducted researches, the investigation of the general personality factors with Internet addiction and negligence has been done, and the investigation of introversion has not been done exclusively. This research aims to investigate the relationship between Internet addiction and introversion among female students in the 3rd district of

Tabriz, which is based on the cognitive-behavioral approach and Maslow's basic needs.

### Materials and Methods

The current research is descriptive and its design is correlational. The current research population includes 9th grade female students who are studying in public high schools in the 3rd district of Tabriz in the academic year of 1994-1995. The size of the population is equal to 2566 female students, and according to the statistical population, the sample size is equal to 349 female students who were selected based on the table of Karjesi and Morgan (21). These people were selected based on the parents' reports to the school counselors about their children's addictive behavior on social networks. The sampling method was also carried out in a multi-stage cluster random manner. That is, 6 schools were selected from the 3rd education district and three classes from each school were randomly selected and the students answered the research questionnaires in groups.

#### Research instruments

A) *Questionnaire of Introversion*: Personality traits as an organized set and a unit consisting of relatively fixed and stable characteristics in people, which together distinguish a person from other people (16). The result of Eysenck's years of effort is the very influential personality theory based on three dimensions. We can consider these three dimensions as meta-factors, which are combinations of traits or factors. Anyway, the three dimensions of Eysenck's personality, which provided a three-dimensional central space for the personality, are: extraversion: it is a state in which a person's forces are directed outside of himself. Introversion: It is a state in which a person's energies are focused on the inner self without interest in the outside world, and the next factor is neuroticism. The general difference between introverts and extroverts is that introverts have better long-term memory than extroverts, perform slower but more accurately, are withdrawn and isolated, have a tendency to feel inferior (inferiority), and suffer from anxiety and depression. And they are more obsessed with preparation. People with high neuroticism show more activity in those parts of the brain that control the sympathetic branch of the autonomic

nervous system. Eysenck's Personality Questionnaire Form of Adolescent and Child was created by Eysenck, which has 81 items and is answered as yes or no. The purpose of this scale is to examine four personality factors: introversion-extroversion (24 items), neuroticism (20 items) and psychosis (17 items). Also, the 20 items of the scale measure sensitivity and desire for social acceptance (lying scale) (22).

In this research, we examined the E scale. Cronbach's alpha coefficient is 0.90 for men and 0.89 for women (23). For each of the items in the questionnaire, there are two options, yes and no, and the option yes will receive a score of 1 and the option no will receive a score of zero.

The scoring of questions 9, 48 and 78 in the main questionnaire E is scored in reverse. In this way, if a person marks the answer "no" in these questions, he will receive a score of 1.

In the E factor, a raw score above 12 indicates that the subject has the traits and characteristics of extroversion, and the higher the score is above 12, the more extroversion is dominant, and the lower the score is 12, the more introverted. .

B) *Young's Internet Addiction Test (IAT)*: To measure Internet addiction, Young's 20-question Internet Addiction Test will be used. Yang designed his 20-question questionnaire based on the symptoms of Internet addiction. This questionnaire is scored by Likert method. The scoring of this 5-point questionnaire is as follows: rarely = 1, sometimes = 2, often = 3, most of the time = 4, always = 5. The overall score of the test varies between 20 and 100, and a score between 20-39 is interpreted as moderate dependence, 40-69 as high dependence, and 70-100 as severe dependence (24). Some researchers such as Vidianto and McMorran used the factor analysis method and the correlation coefficient of the factors that make up the scale in order to check the validity of this test. The factor analysis of this test revealed 6 factors, which were importance, excessive use, inattention to job duties, lack of control, inattention to social life, and prediction, which shows its construct validity (25). In Mansali's study, the reliability of the questionnaire was mentioned above 0.92 (18). Kim et al also reported Cronbach's alpha of 0.90 for this scale (26).

The data collection method was done in the field and using questionnaires related to the

research. The library method was also used to collect the background. In order to analyze the data in the descriptive statistics section (mean and standard deviation) and in the inferential statistics section, Pearson correlation and regression were used using SPSS software. In this research, the first part is devoted to the description of the statistical sample and the raw data obtained from the research variables. In this way, all the data and demographic characteristics of the subjects have been summarized, interpreted, and reported with descriptive indices (frequency distribution tables and percentage frequency, average, standard deviation).

In the next section, the findings obtained from them are discussed.

In this section, Pearson's correlation coefficient and stepwise regression are used.

### Results

In this section, the data related to the studied variables and demographic characteristics are displayed. Table 1 shows the statistical description of Internet addiction, negligence and introversion. Based on the listed results, the average of Internet addiction is 56.56, introversion is 10.68. Kolmogorov-Smirnov test was used to check the distribution of data scores. According to the significant levels obtained, the variables of academic negligence, Internet addiction and introversion have a normal distribution.

**Table 1.** Statistical description of Internet addiction, negligence and introversion

Variable	Minimum	Maximum	Mean	Standard deviation
Internet addiction	20	99	56.56	23.66
Introversion	1	24	10.68	4.32

**Table 2.** Normal distribution of variable scores

Variable	Statistic z	P
Introversion	1.473	0.026
Internet addiction	10.56	0.212

In the present study, Pearson's correlation coefficient and step-by-step regression were used to investigate the hypotheses and find the answer to the research question.

A stepwise regression model was used to predict the criterion variable (Internet addiction) based on the predictor variable i.e. introversion.

**Table 3.** Correlation of Internet addiction with introversion

Variables	Internet addiction	Introversion
Internet addiction	1	0.73*
Introversion	0.73*	1

Table 3 shows that there is a significant relationship between Internet addiction and introversion at the level of ( $P < 0.0001$ ).

Since the relationship between Internet addiction and introversion is examined in this hypothesis, at first, the normality of the distribution of the

variables was examined using descriptive indices, then the relationships were examined through graphs to make sure that the correlations were not artificial. In the following, the relationships between the variables have been tested using Pearson's correlation coefficient. As shown in

Table 3, there is a positive and significant correlation between Internet addiction and introversion (0.73) at the level ( $P < 0.0001$ ). To answer the hypothesis, step-by-step regression

has been used, so that after ensuring the absence of multivariate outlier data and multiple correlation among predictor variables, the analysis was done.

**Table 4.** Summary of step-by-step regression (criterion variable, Internet addiction according to introversion)

Model	Predictor variable	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	SE
1	introversion	0.41	0.17	0.17	36.70

**Table 5.** The results of variance analysis of Internet addiction according to introversion

Model	Sum of Squares	DF	Mean Squares	F	P
1 Regression	170035.917	1	170035.917	126.22	0.0001
Remainder	805572.072	347	1347.10		
Total	129004.561	348			

The coefficients obtained from the step-by-step analysis show that introversion is significant in

relation to Internet addiction. Besides, the beta of the equation is also significant.

**Table 6.** Regression coefficient according to introversion

Model	Non-standardized coefficients		Standardized coefficients		
	B	SE	B	T	P
1 Constant	185.983	7.51		24.73	0.05
Introversion	2.0003	0.17	0.41	11.235	0.0001

## Discussion

The aim of the present study was the relationship between Internet addiction and introversion among ninth grade female students in District 3 of Tabriz. The results of the current research are presented in relation to the variables presented below.

The results of the correlation matrix showed that there is a positive and significant relationship between Internet addiction and students' introversion (0.73). On the other hand, the results of the step-by-step regression table show that 17% of the changes in Internet addiction are explained by students' introversion. These findings are consistent with the findings of Lin et al. (27), Landers and Bari (28), Engleberg and Soberg (29), Davis (30), Kaplan (31) and

Lavasani, Azarniad and Mehmanzav and Rezaian (32) that personality factors Among other things, introversion can affect relationships between people and become more dependent on the Internet.

Since according to Eysenck, introverts are basically more anxious than extroverts, they are more likely to be ashamed and embarrassed to admit their inabilities, and to solve their problems, they resort to emotion-oriented confrontations with the three components of wishful thinking, self-blame, and avoidance and compromise strategies (33).

Using the Internet and spending too much time on the computer and the Internet can be considered one of the ways of coping in

introverted people. Introversion seems to have a higher correlation with Internet addiction. Extroverted people have a warm and friendly behavior, people are friendly, bold, active, in search of excitement and have positive emotions. These characteristics show well why the relationship of extroversion with Internet addiction is negative, it seems that introverts. Due to the lack of interest in social life and preference for solitude, they are more ready to become addicted to the Internet, so that extroverts spend a lot of time on the Internet, which requires avoiding human relationships, which does not match the characteristics of extroverted people (34). Introverts prefer to stay away from real environments based on their low self-esteem and little motivation in dealing with their surroundings, which should be considered in counseling because they are too dependent on their virtual world. It can increase the behavior of withdrawing from the environment in them.

The results of the present study show that there is a relationship between Internet addiction and introversion.

These results are in agreement with the results of Durak and Durak (35), Chao et al. (36), Odaki (37), Niles et al. (38), Kim and Davis (39), Lin et al. , Samson (10), and Lavasani, Azarniad and Mehmanzaveer and Rezaian (32) who investigated academic achievement, the role of motivation and academic negligence. It is also consistent with the findings of Rafati et al. (40) who investigated the role of introversion and extroversion in academic achievement.

Undoubtedly, most studies and research activities are accompanied by some challenges and various problems at the time of implementation. This research is not an exception to this rule and has faced many limitations and problems in doing it.

Since the design of this study was correlational, the relationships between the variables should not be considered cause and effect. Therefore, longitudinal studies are needed to better understand the antecedents and how students' Internet addiction is formed.

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In this research, the participants were ninth grade female students. Caution should be used in generalizing the results to other grades and boys.

Since there has been a relationship between personality factors such as introversion and Internet addiction, it is better to provide more information in this regard to both parents and school counselors in order to prevent these people from becoming more dependent on virtual spaces.

Using the results of the current research, it is better to provide educational brochures to students, parents and school counselors to teach them how to deal with academic negligence in students and to give priority to curricula.

It is better for parents to monitor their children's and teenagers' Internet-related behaviors by taking into account the regulations and programs by being with their children, and prioritize homework for them by using reinforcement programs.

It is suggested to use the method of clinical interview, observation or diagnosis of experts to diagnose Internet addiction in the next research.

It is suggested to select another sample from the present society and compare the results with the present results. In the next research, other personality variables will be selected, and their relationship with internet addiction will be measured and compared with the results of the present study.

Considering the importance of students' addiction to the Internet, it seems necessary to conduct research in order to know more and better the factors affecting them.

On the other hand, if the findings of this research are tested in an experimental test, the cause and effect relationships of the variables can be achieved and the results can be applied with more confidence.

## Conclusion

According to the results, it seems that there is a significant relationship between students' internet addiction and extroversion.

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