

# The Association of Internet Addiction Disorder with Personality Type and Parenting Style among High School Students in Jahrom, Southern Iran

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## Abstract

**Background:** Internet addiction disorder (IAD) has become a major global issue in the modern society. Adolescents may be more prone to IAD due to their particular conditions. The current study aimed to investigate the association of IAD with personality types and parenting styles among a sample of Iranian high school students.

**Methods:** In this cross-sectional study, 400 students (50% male), with a mean age of  $15.5 \pm 1.7$  years, were selected randomly from the high schools in Jahrom city, Fars Province of Iran, in 2020. In addition to the demographic information, each participant was asked to fill out three standard questionnaires concerning IAD, parenting style, and personality types. Logistic regression was used to measure the odds ratio and there was a 95% confidence interval regarding the relationship between the independent variables and IAD. The data were analyzed with SPSS version 17.

**Results:** According to the results of the study, 25.5% of the students had severe IAD. The results of the backward logistic regression showed that the adolescents whose fathers (OR: 13.39, CI: 5.34-23.56) and mothers (OR: 13.64, CI: 7.89-24.99) had a permissive parenting style, as well as those with the personality types of psychoticism (OR: 10.83, CI: 4.26-19.59) and neuroticism (OR: 20.65, CI: 10.06-34.91), were at a higher risk of IAD.

**Conclusion:** The present study revealed that certain personality types and parenting styles are associated with an increased risk of developing IAD in adolescents. These results could be considered to develop appropriate programs for the prevention and control of the problem at the national or regional levels.

**Keywords:** Internet addiction disorder, Adolescence, Personality, Parenting

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## Introduction

The Internet has been growingly utilized as a worldwide source of information, entertainment, and business (1). Reports have suggested that more than 3.8 billion people (65.6% of the world population) used the Internet in 2021 with a dramatic growth by 1331% since 2000 (2). Over the past few decades, the internet has substantially modified people's life styles. This technology has been increasingly used by different social groups and have had many positive and negative impressions on them (3, 4).

The most important disadvantages include immoderate use of the internet, immoral use of it, and the internet addiction disorder (IAD) or problematic internet use (5, 6). Excessive use of the internet could affect almost all living aspects of individuals, such as social and occupational relationships, physical and psychological health, and educational outcomes (7).

IAD, as a compulsive-impulsive disorder, is the state of internet-related physiological dependency and

is also known as pathological use of the internet. IAD comprises five main kinds of addiction, including computer-based programming, game playing, online auctions, online business or betting, and cyber-sexual relations (8).

Studies have revealed that people suffering from IAD show the characteristics of substance addiction, such as tolerance, withdrawal syndrome, recurrence, and mood alterations (9). This disorder is often accompanied by various mental dysfunctions and behavioral problems (10). Therefore, IAD could seriously harm individuals' normal functions and hinder their achievements (5).

Although various groups of people are at risk of pathological internet use (singles, young males, and the less educated), adolescents are more vulnerable to IAD because of low self-control competencies (11). They are at the important stage of personality evolution and are therefore more likely to have risky behaviors and addictions (12). Since the IAD has numerous unfavorable effects on adolescents' life, peculiar attention must be paid to the problem among this group (6).

In order to deal with IAD appropriately, it is necessary to recognize the underlying components and predisposing factors of the problem. Studies have suggested that different factors are associated with IAD, such as personality traits, psychological characteristics (13), and family factors (14). Despite the great deal of research in this regard, pathological use of the internet and its predisposing factors remain as a growing global concern (15). Therefore, in order to apply suitable preventive strategies, investigation of the factors associated with IAD is of the utmost importance and to this end, cultural differences has to be accurately noted (16).

Over the recent years, there has been a lot of research on internet addiction in Iran. However, based on the literature search, no studies have assessed the association of personality trait and parenting style with internet addiction disorders among the Iranian adolescent. Hence, the current study investigated this issue among the adolescents in Jahrom city, in Fars Province, Iran.

## Methods

We conducted this cross-sectional study in Jahrom in 2020. Jahrom is one of the most populated cities of Fars province in Iran. We included the high school students aged 13 to 19 using a multistage cluster sampling method. In this regard, all the high schools in the city were selected as clusters. Subsequently, in each high school, the students from different educational grades were selected via simple random sampling. We utilized a proportional sampling strategy to recruit participants in each high school.

According to the statistical population of 10,000 high school students in the city and considering the power of study to be 80% and type-1 error as 0.5%, the initial sample size was estimated to be 373 students employing Morgan table. However, to increase the precision of the results, a total number of 400 students were included in the study. We excluded those with severe physical or psychological diseases (based on the reports of school authorities and families' self-declaration), in addition to the students who did not accept to participate in this study and those who had lost one or two of their parents. We made phone calls to the students based on the information provided by the high schools. The students who met the inclusion criteria and accepted to participate in the study were recruited. For data collection, we set a meeting session for each participant at the most convenient place and

time for them.

In addition to collecting the demographic information, we employed the Persian version of three self-report standard questionnaires for data collection. Baumrind Parenting Styles Questionnaire (BPSQ) was used to evaluate different parenting styles applied by the students' parents. A parenting style is a psychological construct representing the standard strategies that parents use in their child rearing. BPSQ comprises 30 five-point Likert Scale questions equally divided into three domains. The domain with the highest score was considered as the dominant parenting style. The Persian version of BPSQ was validated in the study of Esfandiari with the Cronbach's alpha values of 0.77 for authoritative, 0.75 for authoritarian, and 0.79 for permissive domains (17).

We evaluated the personality type of the participants using Junior Eysenck Personality Questionnaire (JEPQ). JEPQ comprises 81 Yes-No items in four dimensions. A score higher than the average in each of the domains indicates the personality type of individuals. The reliability and validity of the Persian version of JEPQ were investigated in the study of Rahiminezhad. The Cronbach's alpha values in that study were 0.75 for neuroticism (20 items), 0.76 for psychoticism (17 items), 0.82 for extraversion (24 items), and 0.82 for lie (20 items) scales (18).

Finally, we evaluated internet addiction disorder among the students via young's internet addiction test (YIAT) (19). YIAT consists of 20 five-point Likert Scale questions. The scores from 20 to 39, 40 to 69, and 70 to 100 were considered as normal use of the internet, mild internet addiction, and severe internet addiction, respectively. The validity of the Persian version of YIAT was confirmed in the study of Mohammadsalehi and colleagues, with the Cronbach's alpha value of 0.88 (19).

The data were analyzed using SPSS 17 software. We used odds ratio (OR) and corresponding 95% confidence interval (95% C.I) to investigate the univariate relationship between the independent variables and internet addiction. In addition, the adjusted ORs were estimated using backward multiple logistic regression in order to control the effect of possible confounders. The significance level was set at 0.05.

All the students filled out an informed consent form prior to participating in the study. The Ethics Committee of Jahrom University of Medical Sciences approved this study under the code of IR.JUMS.REC.1394.037.

## Results

This study recruited 400 students (50% male) from 72 high schools of Jahrom, southern Iran. The participants' age ranged from 13 to 19 years with the mean age of  $15.5 \pm 1.7$ . One hundred ninety-seven

students (49.3%) were found to have internet addiction disorder. Permissive parenting style was found in 44% of the fathers (N: 176) while the majority of the mothers (N: 162, 40.5%) had an authoritative parenting style. Table 1 represents the descriptive and demographic information of the students.

**Table 1:** Demographic characteristics of the participants

Variables		Number (%)
Internet Addiction Status	Normal	203 (50.7)
	Mild	95 (23.8)
	Severe	102 (25.5)
Fathers' Education Level	Primary School	79 (19.8)
	High School	167 (41.8)
	University	154 (38.5)
Mothers' Education Level	Primary School	100 (25)
	High School	188 (47)
	University	112(28)
Living Location	Urban Areas	320 (80)
	Rural Areas	80 (20)
Fathers' Parenting Style	Permissive	176 (44)
	Authoritative	126 (31.5)
	Authoritarian	98 (24.5)
Mothers' Parenting Style	Permissive	154 (38.5)
	Authoritative	162 (40.5)
	Authoritarian	84 (21)
Adolescents Personality Type	Psychoticism	95 (23.7)
	Neuroticism	119 (29.8)
	Extraversion	186 (46.5)

**Table 2:** Univariate and adjusted associations of independent variables with internet addiction status

Variables		Normal	With IAD*	P**	OR† (95% C.I)	OR‡ (95% C.I)
Personality Type	Neuroticism	22(12)	79(51.0)	<0.001	26.08(13.30-41.13)	21.06(11.17-35.24)
	Psychoticism	39(12.5)	80(36.8)		18.00(9.10-28.58)	10.60(4.14-19.13)
	Extraversion	164(75.5)	22(12.2)		1	1
Fathers' Parenting Style	Permissive	35(17.2)	141(71.6)	<0.001	9.58(5.42-16.95)	13.15(5.22-23.13)
	Authoritative	99(48.8)	27(13.7)		0.64(0.35-1.91)	1.84(0.71-4.78)
	Authoritarian	69(34.0)	29(14.7)		1	1
Mothers' Parenting Style	Permissive	21(10.30)	133(67.5)	<0.001	13.03(6.98-25.59)	13.18(7.68-24.09)
	Authoritative	125(61.6)	37(18.8)		0.62(0.34-1.12)	0.70(0.30-1.64)
	Authoritarian	57(28.1)	27(13.7)		1	1
Fathers' Education	Primary School	23(11.3)	56(28.4)	<0.001	3.89(2.27-9.71)	1.21(0.76-2.61)
	High School	71(35.0)	96(48.7)		1.07(0.98-2.20)	0.86(0.24-1.16)
	University	109(53.7)	45(22.8)		1	1
Mothers' Education	Primary School	27(13.3)	73(37.1)	<0.001	3.73(2.09-6.67)	0.42(0.14-1.23)
	High School	111(54.7)	77(39.1)		0.95(0.59-1.54)	0.15(0.06-1.38)
	University	65(32.0)	47(23.9)		1	1
Gender	Male	99(48.8)	101(51.3)	0.617	1.10(0.74-1.63)	1.00(.511-1.96)
	Female	104(51.2)	96(48.7)		1	1
Living Location	Urban Area	171(84.2)	149(75.6)	0.032	1.72(1.04-2.83)	1.67(0.71-3.88)
	Rural Area	32(15.8)	48(24.4)		1	1

\*Adolescents with internet addiction disorder; \*\*: Using Chi-square test; †: Univariate Odds Ratio (OR) and corresponding 95% confidence interval (C.I); ‡: Adjusted Odds Ratio (OR) and corresponding 95% confidence interval (C.I) computed using a multiple logistic regression model. Multiple logistic regression adjusted  $R^2=0.738$

**Table 3:** Adjusted associations of independent variables with internet addiction status using multiple backward logistic regression method

Variables		OR <sup>†</sup> (95% C.I.)	P
Personality Type	Neuroticism	20.65(10.06-34.91)	<0.001
	Psychoticism	10.83(4.26-19.59)	<0.001
	Extraversion	1	-
Fathers' Parenting Style	Permissive	13.39(5.34-23.56)	<0.001
	Authoritative	1.81(0.70-4.670)	0.216
	Authoritarian	1	-
Mothers' Parenting Style	Permissive	13.64(7.89-24.99)	<0.001
	Authoritative	0.74(0.32-1.72)	0.494
	Authoritarian	1	-

<sup>†</sup>Adjusted Odds Ratio (OR) and corresponding 95% confidence interval (C.I) using backward method. R<sup>2</sup>=0.736

Table 2 shows the univariate and adjusted associations of independent variables with the IAD as the dependent variable. The unadjusted results revealed a significant association between IAD in adolescents and the personality type, parenting style, education level of both parents, and place of residence. However, following adjustment, no significant association was observed regarding their mothers' education level and place of residence.

Finally, the results of multiple backward logistic regression showed that the adolescents whose parents had permissive parenting style ( $P<0.001$ ), and those with psychoticism and neuroticism personality types ( $P<0.001$ ) were at the increased risk of IAD (Table 3).

## Discussion

The internet has become a universal medium with great uses and various opportunities, yet along with certain threats (20). Various studies have indicated that IAD is one of the most important disadvantages of the internet among different groups, especially in children and adolescents (21, 22). Several factors have been considered as predictors of the IAD in adolescents, such as personality, family function, and psychological characteristics (23, 24).

The results of our study on high school students, in the city of Jahrom in southern Iran, revealed that personality type is one of the leading predictors of IAD among adolescents. This study implied that adolescents with neuroticism and psychoticism personality types were at a higher risk of IAD compared to those with extraversion personality. Numerous studies have shown that adolescents with neuroticism personality were more vulnerable to IAD (13, 25-27). Neurotic adolescents show emotional instability characteristics (28) and experience a high level of stress; they have feelings of vulnerability. Therefore, these traits make

them more prone to IAD (29).

The findings reported by various papers have shown that a high level of psychoticism is associated with stress throughout life, which is correlated with adolescents impaired coping and maladaptive cognitions (28, 30, 31). Adolescents with psychotic traits are introvert and less sociable; accordingly, in order to relieve the anxiety after stressful events, they tend to overuse the internet (28, 32).

Our study indicated that extroverted adolescents were at a lower risk of problematic internet use. The prevailing view is that introverted individuals are more vulnerable to IAD (33, 34). Nevertheless, a significant relationship between IAD and extraverted personality has also been reported (35). This discrepancy could be explained by the dual nature of this personality type (36, 37). Extroverted adolescents are more sociable and active and do not usually need to seek social support or friends online. On the other hand, extraversion is characterized by the need for external stimulation and being impulsive, which makes individuals more vulnerable to addictive behaviors (36).

The obtained findings herein showed that adolescents whose parents' rearing style was permissive were at a higher risk of IAD. This is in agreement with the results of other studies (38, 39). Permissive parenting style is associated with maladaptive cognition in children and adolescents, which is a predictor of IAD (39). When parents apply less limitations on the content and duration of the internet use and are less likely to interact with their children, there would be an increase in the potential of seeking online communications and the risk of IAD in adolescents (40).

### Limitations of the Study

We conducted this study during the pandemic of

Corona virus diseases 2019 (COVID-19). At the time of COVID-19 outbreak, the education was virtual and mainly carried out based on online platforms. This issue can affect the type and amount of the internet use and consequently, the rate of IAD.

## Conclusions

Different factors are associated with IAD among children and adolescents. Our study indicated that adolescents with psychoticism and neuroticism traits were more vulnerable to problematic internet use in comparison with the students with extraversion personality type. In addition, we found that the adolescents whose parents applied permissive rearing style were at a higher risk of internet addiction. Various predictors of IAD in different socio-cultural contexts necessitates delving into these risk factors in order to develop national or regional preventive and control programs.

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## Ethical Approval

The Ethics Committee of Jahrom University of Medical Sciences approved this study under the code of IR.JUMS.REC.1394.037. All the students filled out an informed consent form prior to participating in the study.

**Conflict of interest:** None declared.

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