



A Comparison of Personality Trait and Profile of Compulsive/Heavy Internet Users with Average Internet Users in College Students

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Abstract

Background: This study aimed at comparing the profile and personality traits of compulsive/heavy Internet users with that of average users.

Methods: This study employed the causal-comparative research design. The population of the study consisted of 9800 students of Islamic Azad University, Urmia Branch, out of which 189 male students were selected through multistage cluster sampling. The selected sample responded to Young's Internet dependency test, the NEO five-factor inventory (NEO-FFI) as well as the Minnesota multiphasic personality inventory (MMPI). The data was analyzed by means of multivariate analysis of variance (MANOVA).

Results: The results indicate that compulsive/heavy Internet users that underwent psychological profile measurement, using MMPI, obtained significantly higher scores in hypochondriasis, depression, hysteria, psychasthenia and schizophrenia, yet they obtained lower scores in hypomania. Moreover, it was shown that compulsive/heavy Internet users compared with average Internet users obtained higher scores in personality traits, such as extraversion and neurosis yet lower scores in conscientiousness and agreeableness.

Conclusions: The profile and personality traits of compulsive/heavy Internet users compared with that of average users are different in some respects and indicate malevolence in some cases, which justifies addressing these traits.

Keywords: Internet Users, Iran, Personality Profile, Personality Traits

1. Background

Despite having many advantages and capabilities, the Internet has caused many serious problems, such as information explosion and information overload, obscene contents and information insecurities. In addition, overuse of the Internet will lead to a dependency, which has similarities with other types of dependencies (1). Internet dependency is a set of psychosomatic disorders that includes symptoms tolerance, withdrawal, emotional disorders as well as social relation disorder (1). Many researchers compared psychological, personality, and social features of students, who excessively used the Internet with those of other students (2, 3). Findings of studies indicate that the rate of depression, anxiety, suicidal thoughts, hyperactivity, panic, social phobia, aggressive behavior, violence and anti-social behavior in college students, who are dependent on the Internet, is higher. However, over the past three decades, the Big Five-factor model of personality has necessitated many studies in this field (4). The research of

Meerkerk et al. indicated that there is a significant negative relationship between Internet dependency, agreeableness, conscientiousness, and extraversion (5). In some studies, both positive and negative correlation between extraversion and Internet dependency was confirmed (6). The results of other studies generally illustrate the relationship between Big Five-factor personality traits and Internet dependency in male and female adolescents as well as a significant positive relationship between agreeableness, conscientiousness, and Internet dependency in male adolescents (7). What is obvious in the discussed findings is the employment of the NEO questionnaire in order to measure and compare the attributes of Internet users and non-users. However, this measure is limited to the normal five factors of personality, and the investigation of personality profiles of these two groups based on a questionnaire, such as MMPI, which examines and compares abnormal personality dimensions between target groups, has attracted less attention, although many pathological studies have been

conducted on this subject. The study discovered how Internet dependency is linked to psychological symptoms, such as depression, anxiety, phobias, and physical disorders (8). A positive relationship between Internet dependency and depression was found in the study conducted by Cengiz Sahin on Turkish national students (9). Moreover, another study also found a positive correlation between stress and anxiety and Internet dependency in high-school students (10). The present study aimed at comparing the profile and personality traits of compulsive/heavy Internet users with those of average users in Islamic Azad University, Urmia Branch. Given the addressed issues, the present study raised questions on whether the profile and personality traits of compulsive/heavy Internet users differ from those of average Internet users amongst students of Islamic Azad University of Urmia Branch.

2. Methods

2.1. Study Design and Settings

This study employed the causal-comparative method, or ex post facto research design. The participants replied to the three questionnaires of MMPI short form, NEO-FFI of personality traits, as well as Young's Internet addition questionnaire.

2.2. Participants

The population of the study consisted of all male students of Islamic Azad University of Urmia Branch (about 9800 students), who were studying at the time of this research. Using multi-stage cluster sampling, 189 students from nine classes held on Saturdays and Wednesdays in the academic year of 2015 to 16 were randomly selected.

2.3. Instruments

All the participants were administered the following questionnaires.

2.3.1. The Minnesota Multiphasic Personality Inventory (MMPI)

This test is a self-report questionnaire with 'yes' or 'no' answers. It consists of three valid scales, which provides information on subject's approach to the test, and ten clinical scales, which are used to detect psychological disorders. The MMPI was first developed by Starke R. Hathaway and J. C. McKinley at Minnesota University in 1939 (11). Extensive standardization of the MMPI was carried out in 1982 (11). New development led to devising short forms, new scales, and use of critical items and computer interpretation systems. Normative and validity studies were carried out on different cultural groups, enabling the comparison of data collected from varying cultures. This test can be administered to those aged 16 or older and to those,

who have eight-grade reading ability, and has a high validity and reliability (11). One-month test re-test reliability of the MMPI was reported 0.76 (11). A Cronbach's alpha of 0.89 was reported, which indicates the high internal consistency of the test (11). The MMPI short-forms, which have 71 items, were employed to investigate and draw personality profiles of target groups. This test had acceptable validity and reliability.

2.3.2. The Big Five-Factor Inventory (NEO-FFI)

The main five factors are: (1) neuroticism, (2) extraversion, (3) openness, (4) agreeableness, and (5) conscientiousness. Costa and McCrae developed and revised version of this test at three stages, which is known as the revised personality inventory (NEO-PR-R) (4). In this questionnaire, each dimension is explained by six aspects, and eight questions are given for each aspect. The NEO-FFI is, in fact, the short form of the questionnaire. The participants will choose one of the following options: (a) strongly agree, (b) agree, (c) neutral, (d) disagree, and (e) strongly disagree, when responding to the 60-item test. The results of this measure had acceptable validity in the data of various sources, such as the scaling carried out by classmates or wives (4). Evidence indicates that this questionnaire is in line with other measurement tools of five factors, such as the Goldberg's (1992) personality inventory (11). The value of Cronbach's alpha of the NEO-FFI self-report form for singular scales ranges between 0.18 and 0.56 (4). The test-retest reliability shows correlation coefficient of 0.66 to 0.92 in two estimates. Test-retest reliability coefficients were calculated between 0.38 and 0.75, across a three-month time period, and a Cronbach's alpha of 0.92 was calculated for this scale by its developers (4).

2.3.3. Young's Internet Dependency Test

A questionnaire that was developed in 1998 by Young and consists of 20 multiple-choice items that are rated on the basis of five-point Likert scales, and finally the total rate varies between 0 and 100 (12). The scores are divided to four levels of normal (20), mild dependency (21 - 49), moderate dependency (50 - 79), and severe dependency (80 - 100). The validity of this test, which was calculated using Cronbach's alpha, was 0.945, 0.925, and 0.881 for the entire test, overt symptoms of Internet dependency, and covert symptoms of Internet dependency, respectively (12). This measure of validity indicates that the test has good internal consistency. In the Young's Internet dependency test, a total score of less than 21 indicates the normal subject state, 50 to 79 mild Internet dependency, and 80 to 100 a severe Internet dependency (12). Based on a study conducted by Alavi et al. on Iranian college students, the cut off point for the questionnaire was 0.46 (8).

2.4. Data Analysis

Multivariate analysis of variance (MANOVA) was employed to analyze the data. The participants were fully aware of the objectives of this study and were free to withdraw from participate.

2.5. Ethical Considerations

It was explained to the participants that their participation or lack of participation in the study was optional. In addition, they were assured that their information would be kept confidential.

2.6. Study Procedure

Having explained the purpose of the study to the participants, the researchers administered the questionnaires to them. After completing the questionnaires one at a time, the participants returned the questionnaires to the researchers.

3. Results

First, descriptive statistics of the sample of the study is fully provided in Tables 1 and 2, and the study hypotheses are analyzed by means of statistical formulas in Table 3.

Table 1 presents the demographic characteristics of the sample in terms of age, academic major, and marital status.

Table 1. Demographic Characteristics of the Sample in Terms of Age, Academic Major and Marital Status

Characteristics	Values
Age, mean \pm SD	20.89 \pm 5.32
Major, No. (%)	
Science	104 (0.55)
Engineering	64 (0.33)
Veterinary	21 (0.12)
Marital status, No. (%)	
Married	67 (35.5)
Single	122 (64.5)

Table 2 displays the characteristics of the examined sample in terms of the studied variables of compulsive/heavy Internet users with those of average users.

The results of Table 2 indicate that about 20% of the sample had Internet dependency, while about 80% of the study sample did not have Internet dependency.

Table 3 compares the statistics related to profile and personality traits of male compulsive/heavy Internet users with those of average users.

As the comparison of the profile and personality traits of compulsive/heavy Internet users and average Internet users in Table 3 show, compulsive/heavy Internet users obtained significantly higher scores in factors of neuroticism, extroversion, hypochondriasis, depression, hysteria, psychasthenia, and schizophrenia than average Internet users. The results also indicate that compulsive/heavy Internet users obtained lower scores in factors, namely, conscientiousness, agreeableness, and hypomania than those found in average Internet users. It should be noted that all differences are significant at a level of 0.001.

4. Discussion

Several studies confirm that students with Internet dependency achieved higher scores in neuroticism factor than those without Internet dependency (5-7). Neuroticism is characterized by components, such as feeling of insecurity, tension, anxiety, depression, hostility, and other neurotic traits (4). These personality components that are inherent in neuroticism can actually cause an individual to enter a world that supports these traits. Moreover, individuals can cope with feelings of loneliness, shyness, social withdrawal, and even depression without experiencing any tension. For compulsive/heavy Internet users, the virtual world will be a substitute for the real world, with which the individual will not be able to have successful and enjoyable interaction due to the aforementioned personality traits. Another important component present in neuroticism is low adaptability to other people and the environment (4). Escaping from the world of relations and surroundings and retreating to the virtual world of the Internet can greatly reduce stress and lead people to a life without tension. The result that average users are more extroverted than compulsive/heavy Internet users is not consistent with studies conducted in this field (5, 6), yet consistent with most other research (7). The extrovert factor describes one's comfort levels with relations. Extroversion refers to a number of relations, in which the individuals feel comfortable. High level of extroversion is determined by having a lot of relationships and enjoying those relationships. Moreover, extroverts love people, prefer large groups and gatherings, and they are assertive and talkative. They like sexual excitement and being active and cheerful. Given, the personality traits of extroverts, social relationship in almost every respect is present in extroverted people's lives, in which they are mostly involved and they naturally tend to take refuge in these relations in order to resolve their problems. Therefore, as mentioned earlier, these traits prevent them from shifting to these relations and other environments, including the virtual world. In fact, extroverts have very efficient relations and they rarely take refuge in virtual worlds, including the

Table 2. Descriptive Information of Internet Dependent and Non-Dependent Subjects

Variables	Number		Mean		Standard Deviation		Minimum		Maximum	
	Dependent	Non-Dependent	Dependent	Non-Dependent	Dependent	Non-Dependent	Dependent	Non-Dependent	Dependent	Non-Dependent
Neuroticism (N)	38	151	37.05	26.54	6.24	6.27	21	14	48	41
Extraversion (E)	38	151	32.47	39.86	4.45	7.49	29	14	48	48
Openness (O)	38	151	32.05	32.45	8.48	7.52	20	14	48	48
Conscientiousness (C)	38	151	26.02	36.63	6.51	4.82	16	23	39	46
Agreeableness (A)	38	151	29.84	34	7.05	6.75	19	20	41	45
Lying (L)	38	151	1.86	1.78	0.66	0.73	0	0	3	3
Infrequency (F)	38	151	5.34	5.80	2.84	3.02	1	1	14	14
K	38	151	7.34	7.40	2.69	2.60	3	2	13	13
Hypochondriasis (Hs)	38	151	10.76	7.58	1.30	2.46	9	3	13	13
Depression (D)	38	151	10.39	7.42	3.23	2.24	4	2	17	15
Hysteria (Hy)	38	151	12.57	9.15	3.28	4.00	7	3	21	21
Psychopath (Pd)	38	151	9.39	8.29	3.48	3.55	5	3	16	17
Paranoia (Pa)	38	151	7.84	7.93	2.29	2.20	3	3	13	13
Psychasthenia (Pt)	38	151	10.57	6.11	2.36	1.86	6	3	15	12
Schizophrenia (Sc)	38	151	8.76	7.07	2.72	2.88	4	3	15	15
Hypomania (Ma)	38	151	4.31	6.08	2.21	2.76	1	1	10	10

Table 3. A Comparison of the Profile and Personality Traits of Male Compulsive/Heavy Internet Users with Those of Average Users

Source	Dependant Variables	Sum of Squares	Freedom Degree	F	Sig.
Dependency	N	353.281	1	85.267	0.001
	E	1658.730	1	33.833	0.001
	O	4.802	1	0.081	0.777
	C	3417.308	1	126.293	0.001
	A	519.503	1	11.186	0.001
	L	0.230	1	0.438	0.509
	F	6.402	1	0.717	0.398
	K	0.116	1	0.017	0.897
	Hs	305.805	1	58.748	0.001
	D	267.962	1	43.727	0.001
	Hy	356.478	1	23.801	0.001
	Pd	36.517	1	2.910	0.090
	Pa	0.255	1	0.052	0.821
	Pt	605.630	1	155.492	0.001
Sc	86.742	1	10.622	0.001	
Ma	95.147	1	13.417	0.001	

Internet, wherein the feeling of loneliness is avoided and social incompetence is suppressed. Even if they enter this world, either the Internet is unable, to a large extent, to fulfill their needs, or they employ the virtual world and the Internet to enrich their social relations. It has been determined that average Internet users are more conscientious than compulsive/heavy Internet users. The results of the present study are in line with most findings in this area (5, 7). Conscientious people are those, who are goal-

oriented, scrupulous, ambitious, and capable of impulse control, and have a strong will to do the assigned tasks (4). It is self-evident that individuals with such personality traits are very precise and careful in performing everyday tasks and planning their goals. Even if they are inclined to involve themselves in attractive Internet activities available to others, this involvement will not last for long or will not be addictive due to their ability to control impulses. Most people addicted to the Internet tend to dis-

tance themselves from the real world and are involved in the virtual world; this may be a means of giving up tensions and responsibilities. However, conscientious people will not tolerate staying so long in such conditions due to the very personality dimension and its subcategories, such as personal, social and occupational concerns and being highly scrupulous. It can also be concluded that compulsive/heavy Internet users react to everyday tensions and responsibilities by turning to the Internet and withdrawing from the real world. Moreover, average Internet users are more agreeable than compulsive/heavy Internet users. These results are also in line with research findings in this field (5, 7). Agreeableness is a personality dimension characterized by subcomponents, such as respecting others, especially prominent and important figures, altruism, unanimity, compromising with others, and seeking social and interpersonal relations (4). In fact, this dimension can be a symptom of extroversion, since it is defined in relation to others and others' approval. Nevertheless, compulsive/heavy Internet users experience feelings of loneliness and shyness, and detrimental social relations (12), as a result of which, as mentioned previously, these users become addicted to the virtual world. When these individuals face everyday tensions and responsibilities, they replace it with the real world of social and interpersonal relations. In fact, agreeable individuals are inclined to the external world and its specific social aspects related to the issues in daily life, while the compulsive/heavy Internet users are inclined to take refuge in a world without social and interpersonal interactions. It has also been determined that compulsive/heavy Internet users are more hypochondriac than average Internet users. Some studies have reached the same results (8). The factor's high scores indicates dissatisfaction with one's physical condition, hostility with environmental phenomena, attracting the attention of others through physical discomfort, egocentricity, high expectations, and failure to comply with treatment (11). Several reasons can lead to Internet dependency. A set of personality traits have previously been indicated, yet what needs to be considered is whether Internet dependency can be a symptom of another problem within the person. That is to say, is the dependency an indirect way of expressing oneself through the Internet? The connection between Internet dependency and the hypochondriasis factor shows that this dependency can be interpreted as an indirect way, through which the users display their problems and attempts to draw attention. It has been further determined that compulsive/heavy Internet users obtain higher scores in depression than average Internet users. The results of the present study are in line with most findings in this area (8-10). The depression scale in the MMPI mostly indicates symptoms, such as isolation, low efficiency, difficulty in expressing desires, tendency to social

isolation, excessive anxiety, and humility. The symptoms show that an individual with high scores on this scale experiences serious difficulty in his/her social and interpersonal relations, which leads him/her towards other relations in the virtual world. These relations, which are used as a refuge in the virtual world contain none of the above challenges. Given this, these relations can be considered as a desirable substitute for the person's heavily addiction to the Internet. It should be noted here that the set of scales provided in the MMPI does not represent any personality or other mental disorders, and it only indicates the scope of dimensions. Therefore, having these dimensions, even in higher scopes, does not result in the total isolation and loss of productivity of the individual, and the individual having these dimensions seeks solutions to his/her undesirable states. As a result of these dimensions, he/she escapes from the world of interactions, which is accompanied by further emotional fragility and frustration to the virtual world of relations and the Internet. According to the results, compulsive/heavy Internet users show significantly more symptoms related to hysteria than average Internet users. This scale considers physical discomfort and the conditions, in which individual avoid developing relations (11). Those with high scores in this scale show features, such as self-focused attention, expecting support and help, lack of communication skills, complaining of his/her own incompetence and others' incompetence, unhappiness, and discontent (11). Hysteria involves two very important indicators, which connect this scale to Internet dependency.

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