

# Comparing Personality Traits, Mental Health and Self-Esteem in Users and Non-Users of Social Networks

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## Abstract

**Background:** Various aspects of the psychological component have been affected by the spread of social networks and using these networks by the students.

**Objectives:** This study aimed to examine the personality traits, mental health and self-esteem in users and non-users of social networks.

**Methods:** This study conducted as a casual-comparative study among the descriptive designs. In this regard, 372 female high school students studying in the school year 2015 - 2016 were selected from the Instagram and Telegram users of the social networks using multi-stage cluster sampling. Self-made demographic information questionnaire for the participants, Rosenberg questionnaire for evaluating self-esteem index, Hegzako questionnaire for personality traits and Goldberg mental health questionnaire for mental health index were used in the study. Data were analyzed by chi-square, analysis of variance and Bonferroni test.

**Results:** The results showed that there was a significant difference between users and non-users groups in terms of openness personality component ( $P < 0.05$ ). Furthermore, there was a significant difference in four components of mental health ( $P < 0.01$ ). There was also a significant difference for self-esteem index between two groups ( $P < 0.05$ ).

**Conclusions:** The findings of this study emphasize the attention to psychological factors in planning of preventive interventions.

**Keywords:** Users, Internet, Social Network, Personality, Self-Esteem, Mental Health

## 1. Background

Technological regeneracy and media developments in the recent years have always followed its own consequences. Emergence of new communication technologies has espoused new and exciting communication ways for the human. Social networks have created conditions through the completion of previous communication components and aiding the communication by virtual platform. These conditions help us to communicate, talk and exchange ideas with many familiar and unfamiliar people (1). In parallel with this development, the presence in these spaces has different communication format. This difference caused a growing concern about the consequences of social networks, presence and use of them. Social networks are a gathering place for hundreds of millions of users regardless of borders, language, gender and culture, to interact and exchange information (1). Certainly, the entry of students into cyberspace affects different aspects of communication needs and mental health issues. In particular, the age of puberty has its own considerations.

Personality traits refer to the permanent characteris-

tics over time and do not have many changes from one location to another. It mentions in the nature of the individual points. Personality is explained as "relatively stable pattern characteristics, trends or features that partly give perpetuity." more specifically, personality consists of character traits or tendencies that result in individual differences in behavior, behavior stability over time and continuity of behavior in a variety of situations. These attributes may be unique, or the members of a species are shared with them. But their patterns are different in each person (2). Individuals' identity in cyberspaces is "digital identity". The land, indigenous languages, national culture and race do not determine the identity of individuals in cyberspace. However, limited sectional interests and a variety of topics make people together and form their identity (3).

On the other hand, the world health organization describes mental health as a state of well-being in which the individual finds his ability, uses it effectively and productively and is useful to his community. In general, mental health is created for the purpose of prevention of mental illness, controlling factors affecting its incidence, early detection and prevention of factors resulted in returning

mental disorders and creating a healthy environment in a good human relation (4). Studies showed that using social media is effective on mental health. Britain's Daily mail newspaper published in the UK reported in 2013: Facebook is the third factor of England families' disruption and their separation from each other. According to this report, Facebook has been a major factor in the decline of marriage and increasing divorce. And of the important effects of such divorce cases are communicating again, or sending inappropriate messages or infidelity (5).

Self-esteem is a popular psychological concept and very important factor. In general, self-esteem is described as a self-worth of a person. High self-esteem is considered as a positive and effective factor of mental health. Low self-esteem is a factor of mental disorders and certainly effects individual items. The shortage or losing of self-esteem results in not developing other aspects of personality and even may lead to emerging mental disorders such as depression, aggression and phobia (6). Psychological indices of self-esteem can be affected by cooperation with or using social networks as the same as other psychological aspects.

Rapid and pervasive progress of social networks among the adolescents raises questions about the probable consequences to the users and community. Of the speculations about advantages and disadvantages of social networks for individuals particularly adolescents may refer to the most common concern among the teachers, parents, social media and social politicians. These questions have created a haunted expression in our society.

## 2. Objectives

Based on the above issues and research shortage, this study aimed to examine the effect of social networks interaction on the personality traits, mental health and self-esteem of the students.

## 3. Methods

This study was conducted as a casual-comparative study among the descriptive designs. The population of this study was all female students studying in high schools of region 5 of Tehran in the year 2015 - 2016. Total number of the whole statistical population was 12000 individuals. The sample size of the study was calculated as 372 persons with Cochran formula. The response rate of the questionnaires was calculated as 92%. The study sample was selected using multi-stage cluster sampling. 10 high schools were selected from region 6 after obtaining the consent from the education and nurture administration and also education and nurture department of region 6 for collecting

data. The questionnaires were distributed among 372 participants after necessary explanations for objectives of the study, the answering way and reinforcements of the students to cooperate. They were assured for the confidentiality of their responses. They were also explained that they cannot answer the questions if they want. During a library research method, receipt used to collect information using the technique of taking notes. Self-made demographic information questionnaire of participants, Rosenberg questionnaire for evaluating self-esteem index, Hexaco questionnaire for personality traits and Goldberg mental health questionnaire for mental health index were used in the study. Inclusion criteria of the study were: 1) normal IQ of the student, permanent study in high school at region 6 of Tehran, 2) absence of visual and hearing impairments in Internet users and 3) absence of severe psychiatric syndrome. The exclusion criteria of the study contained: 1) incomplete questionnaires due to a given cut-off point and 2) failure to sign the informed consent form to participate in the study. Mann-Whitney test was used in this study. Furthermore, the nonparametric chi-square test was used to evaluate the demographic characteristics. SPSS software, version 19 was used for data analysis.

The instruments of the study are listed as follows.

### 3.1. Demographic Information Questionnaire:

This questionnaire was used to collect demographic information such as age, education level and duration of the use of social networks.

### 3.2. Hexaco Questionnaire for Personality Traits

This questionnaire contained 100 questions. Six dimensions of Hexaco personality model included Honesty-Humility (H), Emotionality (E), Extraversion (X), Agreeableness (A), Conscientiousness (C), and Openness to Experience (O). Each of the 6 dimensions had 4 sub-scales and each subscale consisted of 4 questions including a total of 96 questions. 4 remaining questions specified to the type of friendship that was grown to above 6 dimensions. Likert scale ranging from 1 to 5 was used for scoring. The reliability of the questionnaire was examined in the Persian study by Cronbach alpha as 0.80 for Honesty-Humility (H), 0.74 for Emotionality (E), 0.81 for Extraversion (X), 0.73 for Agreeableness (A), 0.71 for Conscientiousness (C), and 0.76 for Openness to Experience (O) (7). In this study, validity was performed by factor analysis. All the factors obtained in the original version was confirmed in an Iranian version.

### 3.3. Goldberg Mental Health Questionnaire

This questionnaire was set up by Goldenberg on 1971 for the first time. It has been widely used in various situations

for detection of mental disorders. This tool has different forms of 12, 28, 30 and 60 questions. The most widely used form is 28-item form, not only because it is an advantage during its runtime; but also because of its widespread use in studies resulting in better comparison of validity and reliability (8). The subjects' response to each question determines in a whole four degrees likert from: very less than usual, less than usual, as always, and more than ever. Low-grade indicates health of an individual and high-grade reflects lack of health for an individual in all points. The maximum score obtained is 84. The lower score indicates the person's desirable mental health. This questionnaire has 4 subscales of somatic symptoms, anxiety and insomnia, social dysfunction as well as depression. The reliability of this scale is calculated with test-retest method on adults, which is equal to 0.55. Test-retest reliability coefficient for subscales was between 0.42 and 0.47 (9). Also, the Cronbach alpha coefficient was obtained 0.88 for the whole scale and 0.66 to 0.85 for the subscales. There are many studies about the validity and reliability of this tool in Iran. The result of meta-analysis showed that the average of sensitivity of the 28-question form of mental health is 0.84 and the average of the traits is 0.82. The validity coefficients for four components reported as 0.86, 0.85, 0.72 and 0.82 respectively (10). The cut-off point using Likert scoring method was 23 for the subjects (11).

#### 3.4. Rosenberg Self-Esteem Questionnaire

Rosenberg self-esteem scale was created in order to provide an overall picture of positive and negative attitudes about self. The correlation coefficients for this scale were stronger than the Koper-Smith questionnaire measuring levels of self-esteem. It also has the higher validity. To run this test, the subjects were given a scale and urged treated after reading the sentences, their agreement or disagreement with statements by selecting the "I agree" or "disagree" express. The method for scoring this questionnaire is listed as the agree response to 1 to 5 express receives (+1), the disagree response to 1 to 5 express (-1), the agree response to 6 to 10 express (-1) and the disagree response to 6 to 10 express (+1). Cronbach's alpha for this scale in the first round reported as 0.87 for men and 0.86 for women, 0.88 for men and 0.87 for women in the second round (12). Test-retest correlations ranged from 0.82 to 0.88 and internal consistency coefficient or Cronbach's alpha ranged from 0.77 to 0.88. This scale has highly correlated with National questionnaire on New York and Guttman's scale for measuring self-esteem, so that its validity is confirmed. The validity of this scale is estimated by split-half method of the scale, between the two Persian and English versions with the formula (Spearman - Brown). It was a statistically significant and particular problem in terms of im-

plementation that did not find (13). The validity of Persian version was calculated with test-retest by 10 days interval. The correlation obtained as 0.74. In another study, the internal consistency coefficient obtained for the total sample of students as 0.84, for male students as 0.87 and 0.80 for female students. In addition, multivariate analysis of variance showed that there is no difference between male and female students in terms of self-esteem in the whole scale and in dual extracted factors. Finally, with regard to the reliability and validity of the above, it can be used for clinical and research activities (14).

## 4. Results

Demographic information of the participants is presented in Table 1.

Table 1. Distribution of Educational Majors

Educational Major	Number	Percentage
Conservatory	97	26.1
Work-Knowledge	5	1.3
Math	10	2.7
Experimental field	23	6.2
High school	132	35.5
Human science	11	3
No answer	94	25.3
Total	372	100

In Table 1, distribution of the students is presented by field of study. As can be seen, the highest number of participants belongs to high-school and the lowest number of them belongs to work-knowledge filed. Also, about 25 percent of the participants did not mention their field. In addition, about 60 percent of the participants were to the second grade of high-school and 5.21 to pre-university respectively. 50 percent of the participants took fewer users than 5.3 hours per day, 40 percent between 5 and 5.3 and 10 percent of users more than 5 hours in terms of usage of the Internet. Analysis of demographic characteristics by Chi-square test showed no significant difference between the distribution features ( $P < 0.05$ ).

Multiple analyses of variance were used in order to compare the two groups in terms of personality components from. Before that, the assumption of the normal distribution evaluated by Kalmgrf-Smirnov test and the assumption was verified ( $P > 0.05$ ). But the equality of variances by the Levene test indicates the equality of variances ( $P > 0.05$ ). For this reason, multiple analyses of variance

were used because of obtaining the test assumptions of parametric tests.

Analysis of variance of the dependent variables in levels of students for users and non-users of social networks showed that there is a significance difference only for openness to experience (new alpha equal to 0.004 with Bonferroni method). The mean and standard deviation of components (for up to 3.5 hours) in openness to experience were equal  $2.62 \pm 0.40$ . The mean and standard deviation component of openness to experience (more than 5 hours) of user groups were equal to  $2.80 \pm 0.40$  ( $P < 0.05$ ). Also, analysis of variance showed that there is a significant difference between mental health components (new alpha equal to 0.008 with Bonferroni method) between the two groups of users and non-users. The mean and standard deviation of physical symptoms in user group (up to 3.5 hours) were equal to  $1.94 \pm 0.58$ . The mean and standard deviation of sleep disorders in user group (more than 3.5 hours) were equal to  $2.07 \pm 0.60$  ( $P < 0.01$ ). The mean and standard deviation of anxiety and sleep disorders in user group (up to 3.5 hours) were equal to  $1.95 \pm 0.64$ . The mean and standard deviation of anxiety and sleep disorders in user group (more than 3.5 hours) were equal to  $2.25 \pm 0.65$  ( $P < 0.01$ ). In addition, the mean and standard deviation social dysfunction in user group (up to 3.5 hours) were equal  $2.03 \pm 0.50$ . The mean and standard deviation of social dysfunction in user group (more than 3.5 hours) were equal  $2.22 \pm 0.58$ . Finally, the mean and standard deviation of depression in user group (up to 3.5 hours) were equal to  $1.83 \pm 0.73$ . The mean and standard deviation of depression in user group were  $2.16 \pm 0.88$  ( $P < 0.01$ ). Overall, the mean of mental health in non-users were higher than user group (all  $< 0.01$ ). Data analysis showed a significant difference between the two groups of users and non-users ( $Z = -2.46$ ,  $P < 0.05$ ).

## 5. Discussion and Conclusion

This study aimed to assess personality characteristics, mental health and self-esteem among users and non-users of social network. The results showed that there are significant differences between users and non-users in terms of openness to experience and personality components ( $P < 0.05$ ). In addition, there were significant differences between two groups of users and non-users in terms of the four components of mental health ( $P < 0.01$ ). Furthermore, there was a significant difference between the two groups in self-esteem component ( $P < 0.05$ ). Some parts of the results of the study showed there were significant differences in openness between users and non-users groups with fewer than 3.5 hours and more than 5 hours usage of Internet. The result of one study which is

partially in line with this result showed that there was a significant difference between addicted and non-addicted students in terms of personality traits. In this way, the neuroticism of students addicted to the Internet was more than non-addicted students. Three variables: extroversion, agreeableness, and conscientiousness were higher in non-addicted students. But in terms of character traits, openness to experience, there was not a significant difference between the two groups (15). Another study examined the relationship between internet addiction and personality traits of high school students. The results showed that there was a significant relationship between internet addiction and neuroticism and extraversion significant. However, there was not a significant relationship between conscientiousness and internet addiction. So, addiction to the Internet is associated with some personality traits of students such as neuroticism and extraversion (16). In a study with preventive purposes, Ahmadi (2012) in an article entitled "The role of personality traits in online friendships" described that the identification of personality traits as predictors, can be useful according to high-risk groups and preventive measures in this regard. The results of this study showed that girls are chatting more than boys. There is a negative relationship between the amount of online friendship and secretly chat with personality traits of neuroticism and agreeableness. There is a positive significant relationship between the amount of online friendship and secretly chat with extraversion, openness to experience and conscientiousness. Given the positive relationship between chat and extraversion as well as openness to experience, it can be said that virtual communication such as chat rooms are compensating real relationships (17). Sun Li et al. (2013) examined the relationship between personality traits and self-expressiveness of users on Facebook in the form of an online survey. The results showed that there is a positive significant relationship between extraversion in writing and the news with expressiveness. Extroverts than introverts send more photos and update their pages. They also have more friends to share their content. In addition, extroverts receive more likes and comments, write more and share more news than introverts. In addition, narcissistics rivalry updates their status. Also, neuroticism and conscientiousness had a negative relationship with writing comments. Finally, there was a negative relationship between openness to experience and sharing the news (18). In this regard, Ahn and colleagues (2015) investigated two separate effects of vulnerability and megalomania caused by narcissism in privacy controls on social networks. The results showed that narcissism is a psychological factor predicting the behavior of individuals on social networks (19). Jin Sin Tong et al. (2016) in an article entitled "personality traits, interper-

sonal relationships, online social support and Facebook addiction” stated that using too much social networking has been a global phenomenon due to the widespread use of mobile phones. Although some personality traits such as agreeableness, conscientiousness and neuroticism were negatively associated with addiction to Facebook; interpersonal relations and online social protection, had a positive relationship with Facebook addiction. Online interpersonal relationships and neuroticism are leading predictors of addiction to Facebook (20). Finally, Dong Liu and Baumeister (2016) in their article titled “Social Networks and Self-worth Character” in the form of a meta-analysis stated that social media offer new ways to communicate interpersonal and expressiveness. Further analysis showed that high narcissism associated with social media activities such as update status, photo uploads, commenting connected to others and the number of friends (21).

On the other hand, the results of this study showed that the two groups showed a significant difference in terms of the four components of physical, anxiety and insomnia, social dysfunction and depression. Some studies have been done in line with the findings. Anderson (2010) stated that an individual chooses the Internet as a way of escape from the real problems, getting rid of malaise, getting rid of feelings of helplessness, guilt, loneliness, anxiety and depression (22). Pantic and colleagues (2012) examined the relationship between online social networks and depression in their high school. Results showed that high school students spend an average of two hours for social network and three hours for watching TV. The results indicate that there is a relationship between addiction to online social networks and depression (23).

Etiologically, self-esteem can be considered as a dependent variable in the education status for children and adolescents. Decreasing the time for the usage of the social network is among the most important factors causing a negative impact on academic performance. Studies in this regard have shown that most of the students understand side activities as the most important preventing factors. This one results in backwardness of education and increasing the time period studied. The question of the effect of social networks on the study hours of students has been disputed in various studies. Cooperation of only female students, as well as restrictions to Tehran and region 6 of Education, are among the limitations of this study. It is suggested to conduct this study among male students and also in other parts of Tehran and other cities. Explaining any influence on self-esteem through the use of social networks requires controlled studies and it is not explained only by doing research in the field of affiliate scheme. This substrate can be the subject of future studies.

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