



## Factors influencing dependence on mobile phone

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### Abstract

**Introduction:** The purpose of current study was to investigate the relationship between the problematic use of mobile phone and Big Five personality traits among students of Tabriz University of Medical Sciences in Tabriz, Iran.

**Methods:** A total number of 120 students (80 females and 40 males) were selected by applying proportional randomized classification sampling method from Tabriz University of Medical Sciences. The Mobile Phone Problematic Use Scale (MPPUS) and demographic questionnaire were used to gather data. Data were analyzed using SPSS software.

**Results:** Analysis of gathered data showed that gender, neuroticism, extraversion, and openness to experience had positive correlation with the problematic use of mobile phone, whereas conscientiousness and agreeableness were not correlated with the problematic use of mobile phone.

**Conclusion:** The evaluation of Big Five personality traits would be a reliable factor for predicting the problematic use of mobile phone among students.

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### Introduction

Technology plays an important role in communication and information transmission in the world. The mobile phone (cellular-phone) technology is one of the most important and widely-used tools among numerous social groups, especially among young people. The mobile phone has earned a strong position in modern life and the human society and is considered as an indicator of communication technology. Mobile phones are utilized by a vast majority of the population, especially by young people in developing countries. Mobile phones provide services and features such as calls, sending and receiving text, audio and/or

video messages as well as accessing the Internet and social networks. These facilities could be used anywhere anytime and have become so attractive to people that they have become as an integral part of people's life; therefore, they cannot be considered only as a technical tool.

Despite all the benefits of the mobile phone technology, which help people to use it for managing and regulating their daily needs of life, these devices have also many disadvantages and side-effects that cannot be ignored or easily neglected, especially when it deteriorates the individuals and/or the society rules. Dependency or addiction to the mobile phone, in a way that people lose their

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ability to control themselves to avoid the mobile phone due to the psychological aspects, is an example of this regard. Addiction to the mobile phone can cause problems in social life of individuals and interpersonal behaviors.<sup>1</sup> Chaos driving, increasing accidents and confusion in the schools' classrooms are some examples of disorders caused by overusing of mobile phones.<sup>2</sup> The results of some studies have indicated that dependence on mobile phone is associated strongly with other types of addiction such as addiction to the Internet, drugs, alcohol, gambling, and so on.<sup>3,4</sup>

Mobile phone addiction causes serious problems for people in their social life and job. The result of studies indicated that there is strong correlation between problematic use of mobile phone and personality features, such as high approval motivation, low self-esteem, extraversion, poor social relationships and high self-monitoring.<sup>1,5</sup> Those people with such characteristics continuously need to be in contact with other people and when they are unavailable due to the mobile phone problems, they get psychological problems such as anxiety disorder, sleep disturbances, irritability, shaking, difficulty in falling or staying asleep, and even digestive problems.<sup>6</sup> The problematic overuse of mobile phone was related to depression, anxiety disorder, psychological suffering, and unhealthy lifestyle.<sup>7</sup>

Some studies showed that mental health problems are being increased among young people all around the world.<sup>8,9</sup> It is estimated that the reason for increasing mental and psychological problems among people is due to not only the swift growing and widespread use of mobile phones, but also the profound consequence of communication and interactions in daily life of people. Studies have confirmed the negative impact of overuse of mobile phones on psychological and physical health of students.<sup>4</sup> The results of other studies confirmed that the radiation of mobile phone makes harmful changes in gene regulation, visual sensation and auditory sensation. The problematic use of

mobile phone causes increased headache, ear problems, losing memory, and fatigue.<sup>10</sup> The results of some studies also revealed that long-term use of mobile phones causes brain tumors.<sup>11</sup> With regard to psychology, the communication technology decreases social relations and the health of people due to isolation, depression, and loneliness. Another study showed the use of information and communication technology cause social anxiety and insomnia.<sup>12</sup>

Mobile phone addiction causes negligence of responsibilities and important life activities like working or studying, isolation from close family and friends, denying the problems and focusing constantly on the applications of the mobile phone. People who overuse the mobile phone become completely upset when deprived from it regardless of the reason and when their mobile phone is switched off, they feel anxious and irritable.<sup>13</sup>

The current study aimed to reveal the relationship between the problematic use of mobile phone and the Big Five personality traits among students of Tabriz University of Medical Sciences, Tabriz, Iran.

#### Methods

A cross-sectional descriptive study was performed in different faculties of Tabriz University of Medical Sciences during April and May 2016 to investigate the relationship between personality characteristics and the problematic use of mobile phones in students. The Persian version of Mobile Phone Problem Use Scale (MPPUS) test was distributed among participating students. All duly filled questionnaires were analyzed with SPSS software (version 23, SPSS Inc., Chicago, IL, USA). In this study all participants owned the mobile phone and used their own mobile phone regularly. The aims of study were clearly explained by research team members to all participants and informed consent was obtained beforehand. The NEO-FFI and MPPUS were used for gathering data.

## Results

An internal reliability test was used to measure the consistency of variables of Persian translation for Mobile Phone Problem Usage Scale. The result showed that the calculated Cronbach's alpha was .83, indicating a high level of internal consistency and proposed that items were homogenous. The total, mean and standard deviation (SD) of Big Five traits, age, and gender were measured posing the minimum, maximum, and the skews for every independent variable.

A total of 150 students were randomly selected from different faculties and only 120 students agreed to complete the questionnaires. From a total number of 120 participating students in the study, 40 (33%)

were male and 80 (67%) were female. The age of participants ranged from 18 to 30 years with the average of  $21.03 \pm 2.25$  years.

Table 1 shows that problematic use of mobile phone skewed negatively regarding neuroticism, extraversion and openness to the experience variables. Personality characters inverted by subtracting them from a maximum value before transformation were applied.

The multiple regression measurement revealed that the Big Five personality traits and gender can significantly predict the scores on the overuse of mobile phone in MPPU ( $P < 0.001$ ). Females, those with high extraversion, high neurotics, and low open-minded traits are liable to score higher on the scales (Table 2).

**Table 1.** Mean, standard deviation (SD), minimum, maximum, and skew of the independent variables

Variable	Number	Mean $\pm$ SD	Minimum	Maximum	Skew
Gender	120	$0 \pm 0.37$	1	2	0.07
Problematic use of mobile phone	120	$113.1 \pm 36.5$	28	237	0.60
Neuroticism	120	$19.9 \pm 6.87$	5	48	-0.04
Extraversion	120	$27.3 \pm 6.84$	6	48	-0.05
Openness to experience	120	$31.7 \pm 4.68$	18	49	-0.11
Conscientiousness	120	$25.9 \pm 5.67$	6	68	3.90
Agreeableness	120	$31.2 \pm 4.93$	15	39	0.73

SD: Standard deviation

**Table 2.** Standardized regression coefficient ( $\beta$ ), t-value of ( $\beta$ ), and significant value (P) of predictors of traits

Variable	$\beta$	T	P
Gender	0.09	2.13	0.098
Low neuroticism	-0.19	-4.93	0.001
Extraversion	0.21	4.98	0.001
Low openness to experience	0.15	4.09	0.001
Conscientiousness	0.03	0.58	0.403
Agreeableness	0.06	1.38	0.128

## Discussion

The objective of current study was to distinguish the relationship between the problematic use of mobile phone and the Big Five personality traits. This finding should not come as a surprise, because the people with extraversion traits tend to be naturally social,

talkative, and outgoing. These characters are general traits among those who overuse the mobile phone.<sup>1,3</sup>

Students with problematic use of mobile phone also showed high neuroticism. This is rational because neuroticism is associated

with high approval of motivation and low self-esteem. Nevertheless, Bianchi and

Phillips<sup>3</sup> in their study did not show a relationship between the scores of problematic use of mobile phone and the neuroticism traits.

In addition, analysis of the study indicated that openness to experience was negatively correlated to the problematic use of mobile phone. The possible explanation could be the correlation between low self-esteem and overuse of mobile phones. Those with low traits of openness to experience tend to use mobile phones problematically.<sup>14,15</sup>

Students with low level of openness to experience have a distinctive personality trait for expecting the problematic use of mobile phone. Those who overuse the mobile phones are strongly reluctant to neglect their own phones to avoid negative emotions like feeling lost, isolation and depression. The study of Takao verified a negative correlation between openness-to-experience and the problematic use of mobile phone, which is inconsistent with the finding of this current study.<sup>16</sup>

#### Conclusion

The problematic use of mobile phone can interfere in education. The study concluded that the excessive mobile phone usage is predictable by measuring the personality characteristics of students.

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#### Authors' Contribution

Mohammad Hossein Biglu involved in acquisition data, drafting the manuscript and revising it critically for important intellectual content. Mostafa Ghavami involved in acquisition, analyzing the data and giving the final approval of the manuscript for publishing.

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#### Conflict of Interest

Authors have no conflict of interest.

#### Ethic approval

This current study has been approved by the ethics committee of Tabriz University of Medical Sciences (approval number: TBZMED.REC.1394.21), and have been performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

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