

Relationship between mobile phone addiction and Narcissistic personality disorder among medical students

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ABSTRACT

The aim of this study was to investigate the relationship between narcissistic personality disorder (NPD) and mobile phone addiction (MPA) among medical students. This analytical cross sectional study was conducted on medical interns and residents in 2018. Smartphone addiction scale (SAS) was used to examine the MPA and Narcissistic Personality Inventory (NPI-16) questionnaire was used to investigate the NPD. Also, demographic information including age, gender, residence, educational level and marital status were also recorded. 160 medical students participated in this study. The prevalence of MPA and NPD were 38.1% and 30% respectively. The relationship between MPA and marital status, residence and educational level were statistically significant ($P < 0.01$). Among the demographic variables only marital status has a significant relationship with NPD ($P = 0.016$). MPA was significantly higher among individuals with NPD ($P < 0.0001$). It is recommended that MPA be considered as a risk factor for NPD in future studies.

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Keywords: Narcissistic personality disorder, Mobile phone, Addiction, Medical Students

Background

Over the years, the use of social and mobile networks has grown with the aim of social activities, leisure and spending time between people around the world¹⁻³. Research results have shown that the use of mobile phones has become an obligatory ritual of the people's lives⁴. Results of study conducted in the United States on over 2,000 people showed that 60% of people cannot even spend an hour without their mobile phone, 54% were also checking their mobile while lying in bed, 39% were using mobile phone in the bathroom, 24% were using while driving, and 30% were checking their mobile phone during a meal with others⁵. Although mobile phone dependence quickly became a normal natural phenomenon, concerns about addiction to these networks and mobile phones have increased^{6,7}. It seems that the high usage of the mobile phone is associated with the large use of social networks, and social networks create dependencies⁸. Results of studies have also shown that people who use a lot of virtual networks or cyberspace are also susceptible to mobile phone addiction (MPA)⁹. Extroverted people tend to have more smart phones and are more interested in using text messages to communicate¹⁰. While introverts use mobile phones to compensate for their non-social relationships, and are more likely to be addicted to mobile phones¹¹⁻¹³. Recently, a significant relationship has been found between dependence to

technology and disturbances such as attention deficit hyperactivity disorder, obsessive compulsive disorder, anxiety and depression¹⁴⁻¹⁶. Narcissism is a personality disorder that is associated with grandiosity and feeling of being worthy¹⁷. Affected people have a tendency to show an ideal of being to win others' praise¹⁸. These people regularly use social networks such as Facebook to update their personal information, put photos and try to attract others¹⁹⁻²¹. It has recently been suggested that individuals with Narcissistic personality disorder (NPD) are at increased risk for social networking dependence (SND), and this dependence has many adverse effects for them, including the feeling of dissatisfaction with personal relationships and psychological stress. In line with these studies, it has been shown that narcissism can lead people to SND because they have a great tool for attracting others' attention¹⁹⁻²¹. While previous studies failed to determine the relationship between NPD and its predictive role in dependence to social networks, recent studies have shown a positive relationship between NPD and SND^{3,22,23}. It is hypothesized that social networks provide an ideal condition for narcissistic purposes and a better chance of displaying to large number of spectators²⁴.

The results of the studies have demonstrated that medical students are more interested in taking photos of themselves, which can indicate a more prevalent NPD in these individuals²⁵. Also in a study in India, the prevalence of MPA was more among

medical students²⁶ However, there are insufficient studies about the prevalence of this disorder among medical students.

Objective

Because the medical profession is critical and the fact that doctors are directly linked to the people, it is necessary to obtain accurate information on the common disorders among them in order to provide solutions to improve these issues. The aim of this study was to investigate the relationship between NPD and MPA among medical students.

Methods

Study Design

This cross-sectional study was conducted in 2018 on interns and resident physician in Shahid Beheshti University of Medical Sciences, Tehran, Iran. According to Cochran formula, 160 samples were selected with simple random sampling method. In this study, a consensus sampling technique was used. Sampling continued until the ideal sample size was reached. The response rate was (90.9%). Out of 176 medical students, 160 (90.9%) fully answered the questions and entered the study. The inclusion criteria were studying at medical internship or residency and having a smartphone with the ability to communicate with cyberspace. Individuals with a history of illness or psychiatric problems, and the use of psychosocial drugs as well as those who did not consent to participate in the study were excluded.

Measurements

In this study, a standard questionnaire named smartphone addiction scale (SAS) was used to examine the MPA. The Narcissistic Personality Inventory (NPI-16) questionnaire was used to investigate the NPD. Also, demographic information including age, gender, residence, educational level and marital status were also recorded. All questionnaire were provided to participants and they should complete them with pen/pencil.

The SAS questionnaire consists of 33 questions with Likert scale including different aspects of the MPA and each question has a score between 1 point (completely disagree) to 6 points (I totally agree). Validity and reliability of this questionnaire have been confirmed by Amirlatif et al. in Iran²⁷ and the score of 106 and higher is considered as addiction to smart phone (Appendix A).

The NPI-16 questionnaire is a shortened version of 40-item questionnaire of NPD that has been made by Ames et al. for measuring the characteristics of narcissism²⁸. This questionnaire has no sub-scale and evaluates NPD based on a one-dimensional approach. NPI-16 consists of two phrases with the opposite concept that the respondent must select one of them. The test-retest reliability coefficients reported 0.85 for 5 weeks²⁸. Also, validity and reliability of this questionnaire in Iranian society were confirmed in Mohammadzadeh's study and Cronbach's alpha coefficient was 0.79. This study concluded that in the Iranian population, NPI-16 is an appropriate tool for screening in NPD-related research²⁹. In the NPI-16 questionnaire there are two columns that each column has 16 questions. The questions of first column suggests the narcissism and the opposite column suggests the lack of narcissism. Each answer in the first column gives one point and each answer in the other one is zero. A total of 8 points and higher are considered as NPD (Appendix B)

Ethical Consideration

Signed informed consents were obtained from all participants. The researchers were committed to the ethical guidelines of the Declaration of Helsinki and approval for the study was obtained

from the Institutional Review Board at Shahid Beheshti University of Medical Sciences³⁰.

Statistical Analysis

Data were analyzed by Statistical Package for the Social Sciences (SPSS) software version 16 (IBM, Chicago, IL, USA) using independent t test and chi square tests. In all calculations, P value of <0.05 was considered statistically significant in analytical tests.

Results

Out of 176 medical students, 160 (90.9%) fully answered the questions and entered the study. Among them 79 (49.4%) were female and 81 (50.6%) were male. The mean age of participants was 26.96 ± 2.43 years. 112 (70%) were single and 48 (30%) were married. Also, 90 (56.25%) were medical interns and 70 (43.75%) were residents. 95 (59.4%) were living in the home and 65 (40.6%) lived in the dormitory. The results of the SAS questionnaire showed that in general, 61 (38.1%) students had scores higher than 106 who had MPA, and 48 (30%) students according to the NPI-16 questionnaire had a score above 8 that was considered to be NPD.

According to the Chi-square test, there was no significant relationship between MPA and gender ($P = 0.2$). However, the relationship between MPA and marital status ($P < 0.0001$), residence ($P = 0.006$) and educational level ($P < 0.0001$) were statistically significant. So that MPA in participants who lived in dormitory and were single and intern were significantly higher (Table 1).

Also, the results of the Chi-square test showed that among the demographic variables only marital status has a significant relationship with NPD, so that NPD was significantly more prevalent in singles ($P = 0.016$). However, there was no statistically significant relationship between NPD and other parameters such as gender ($P = 0/5$), residence ($P = 0.129$), and educational level ($P = 0/728$) 2). Finally, according to the Chi-square test, MPA was significantly higher among individuals with NPD ($P < 0.0001$) (Table 1 and 2).

To remove the effect of covariate and to see which variable account for most of the variance, ANCOVA analysis was done. This analysis showed the effect of the covariates was not statistically significant and there was statistically association between MPA and NPI after adjusting for other variables.

Discussion

In this study, the relationship between medical students' addiction to mobile phones and NPD was investigated. In general, 38.1% of students had MPA and 30% had NPD. In a review article³¹, the prevalence of NPD in different societies was reported to be 2.6%, so results of present study indicate that this disorder is more prevalent among medical students. This can be justified by the fact that the medical field has a high degree of respect in the community, and a lot of people's attention to this discipline can lead students to this disorder. Furthermore, the prevalence of MPA was reported 16% in general population of Switzerland³² and 23.3% in Chinese students³³. The results of the present study have shown higher results in the medical students.

The results of this study showed that among demographic factors only marital status was significantly related with NPD, while the residence, educational level and gender had no relation to this disorder. Similar to the results of present study, Stinson et al. reported that NPD was more common in single individuals³⁴. Despite to the results of the present study, Grijalva et al. in 2015³⁵ and Khalili et al. from Iran in 2017¹⁷ demonstrated that the prevalence of NPD was more in men than women respectively. Given this contradiction, it

Table 1: Relationship between mobile phone addiction and other study variables

	Mobile phone addiction		P value (chi square test)
	Yes (n=61)	No (n=99)	
Gender			
Male (n=81)	27 (44.3%)	54 (54.5%)	0.2
Female (n=79)	34 (55.7%)	45 (45.5%)	
Marital Status			
Married (n=48)	5 (8.2%)	43 (43.4%)	<0.0001*
Single (n=112)	56 (91.8%)	56 (56.6%)	
Residence			
Personal home (n=95)	28 (45.9%)	67 (67.7%)	0.006*
Dormitory (n=65)	33 (54.1%)	32 (32.3%)	
Educational Level			
Internship (n=90)	46 (75.4%)	44 (44.4%)	<0.0001*
Residency (n=70)	15 (24.6%)	55 (55.6%)	
Narcissistic personality disorder			
Yes (n=48)	29 (47.5%)	19 (19.2%)	<0.0001*
No (n=112)	32 (52.5%)	80 (80.8%)	

Table 2: Relationship between Narcissistic personality disorder and other study variables

	Narcissistic personality disorder		P value (chi square test)
	Yes (n=48)	No (n=112)	
Gender			
Male (n=81)	26 (54.2%)	55 (49.1%)	0.5
Female (n=79)	22 (45.8%)	57 (50.1%)	
Marital Status			
Married (n=48)	8 (16.7%)	40 (35.7%)	0.016*
Single (n=112)	40 (83.3%)	72 (64.3%)	
Residence			
Personal home (n=95)	25 (52.1%)	70 (62.5%)	0.219
Dormitory (n=65)	23 (54.1%)	42 (37.5%)	
Educational Level			
Internship (n=90)	20 (41.7%)	50 (44.6%)	0.728
Residency (n=70)	28 (58.3%)	62 (55.4%)	
Mobile Phone Addiction			
Yes (n=48)	29 (47.5%)	19 (19.2%)	<0.0001*
No (n=112)	32 (52.5%)	80 (80.8%)	

seems that gender in different populations has different relationship with NPD. Also, the results of this study demonstrated that other demographic factors have significant relationship with MPA. The results of this study were similar to the results of study conducted by Wang et al.³³. The increased prevalence of MPA among residents of the dormitory could be due to lack of facilities in dormitories and the separation of people from the family using mobile phones and social networks to fill their vacancies. Also, medical residents spent less time in using their mobile phone due to less free time³³, which can justify the results obtained in the study.

Finally, the results of this study showed that MPA is significantly higher among students with NPD. According to ANCOVA analysis the effect of the covariates was not statistically significant and there was statistically association between MPA and NPI after adjusting for other variables. Similar to the results of this study, Pearson et al. demonstrated that not only individuals with NPD had more MPA, but that addiction to the mobile phone has led people to narcissistic traits, even in those with no personality disorder³. Currently, smart phones play an important role in people's lives due to their easy access to the Internet. People can use it to play, communicate with others, store and share information, access scientific resources. It is also more common in younger people because of early technology learning³⁷. In a study conducted by Anderson and colleagues, there was a significant relationship between social networking and NPD²². Also, the results of studies show that individuals with NPD tend to have more attractive images on social networks^{24,38}. Since the use of mobile phones is more in access to these networks, it can be argued that there is a significant relationship between addiction to mobile phone and NPD, which is also proven in present study. Also, the abundant use of mobile phones can have important effects on mental health including depression and chronic anxiety^{39,40}. It can also increase suicide among people⁴¹. This study does not address the consequences of using mobile phones. But despite to the results of present study, Hussain et al. reported that there is not a significant relationship between MPA and NPD among general population. This difference in results may be due to the different study population⁴².

Of course, there is the hypothesis that MPA can create narcissistic characteristics. In this study, the relationship between these two parameters has been investigated, but one of the limitations of this study was the lack of the longitudinal relationship between NPD and MPA and the absence of a control group. In future studies, it is recommended that MPA be considered as a risk factor for NPD compared with control group.

Another limitation of this study was common method bias since the data was collected using a single instrument at a discrete point in time.

Due to the importance of personality disorders, especially narcissism and its close relationship with MPA, it is recommended that these disorders be considered when students enter universities, so that they can be addressed by counseling and psychotherapy sessions if necessary. It is also better to consider MPA as a risk factor for narcissism if students are suspected of having this disorder.

Conclusion

The results of this study demonstrated that the prevalence of MPA was 38.1% and the prevalence of NPD was 30% among medical students. MPA was significantly higher in students with lower education level, singles and dormitory residents while NPD was higher in singles. It was also found that MPA was significantly higher in individuals with NPD. It is recommended that MPA be considered as a risk factor for NPD in future studies.

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