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ORIGINAL ARTICLE

Predictors of addiction to smartphone social networks in Iranian first-year medical sciences students

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Abstract

Objective: Social media addiction (SMA) among male and female students is different and influenced by different factors. This study was conducted to investigate the predictors of SMA in male and female first-year medical sciences students of Ilam-Iran.

Method: In this descriptive cross-sectional study, 286 male and female first-year students living in dormitories entered the study in 2022 by cluster random sampling method. The data collection tools included demographic characteristics, activity in social medias, and smartphone addiction based on social media usage. The data were analyzed using SPSS software. Independent t-test and the general linear model were used.

Results: The mean ± SD of the overall score of SMA in females was lower than males, but there was no statistical difference (59.4 ± 18.8 vs. 63.3 ± 16.3, P=0.063). Both groups were in the range of normal users of social media. Females and males had statistically significant differences in subdomains of individual performance and social communication (P ≤ 0.001). Instagram was the most commonly used social media and female used Instagram less than male (45% vs. 48%, P>0.001). In both groups, use of social media in clinical settings, also in male amount of daily activity in social media were predictors of SMA.

Conclusion: Students were in the range of normal users of social media, but they were active in social media in clinical settings and Instagram was the most commonly used social media. Education authorities should have appropriate planning to correct use of , social media in clinical settings.

Keywords: Addiction, Smartphone, Social media, Students

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INTRODUCTION

About 85% of Iranian students use smartphone social media [1], with Telegram being the most commonly [1, 2]. When the use of social media is poorly managed, social media addiction (SMA) is one of the negative consequences for users who use social media excessively [3]. Addiction to social media is a type of behavioral addiction [4].

The prevalence of SMA among students is increasing, and according to a meta-analysis conducted in 2018, one-third of Iranian students are addicted to social media [5]. The results of studies, gender may have an effect of SMA, some studies show more addiction among female students [3, 6], and some show more addiction in male students [2, 7]. Also, SMA is influenced by various social, cultural [3], and economic factors [8]; Longer duration of use, use of social media for entertainment [2] and marital status [9] are all risk factors for SMA [10]. In addition, entering the university, being away from home and family, and staying in a dormitory bring new opportunities for a person, but they also bring challenges and stress factors that are inevitably associated with such a transition, the feeling of homesickness, loneliness, and lack of support from those around in the dormitory, economic problems, and a lack of recreational and welfare facilities are among the problems of living in the dormitory [11], and living in the dormitory is one of the risk factors for SMA [2].

SMA in the university has negative effects on the social, academic performance, physical, and mental health and leads to a drop in grade point average [12], anxiety and obsession with social media [6], depression, addiction to food and shopping [13] and sleep disorder [9].

Students, as a fundamental element of the educational system, have a special role and position in achieving the goals of the educational system, and improving the quality of their mental and physical health will lead to the further development of this segment of society. Therefore, identifying and resolving students' problems has been at the forefront of educational programs. Recent studies have shown that students are exposed to the risks and complications of these technologies [14, 15]. One of the educational problems of the increased use of social networks and SMA is their negative impact on students' academic performance and grade point average [12]. Considering the ever-increasing expansion of SMA and their excessive use, the few studies in the field of predictive factors of SMA in male and female first-year students of medical sciences living in dormitories, and the presence of different results in the field of SMA in male and female students were done. The present study aims to investigate the predictors of SMA in male and female first-year students living in the dormitories of Ilam University of Medical Sciences (Ilam-Iran) and the comparison of male and female was done, so that the results of this study can be used to identify and eliminate risk factor for SMA and reinforcement protective factors for SMA and lead to the identification of deficiencies in educational rules and time management skills in the use of social medias in clinical setting and the classroom. Also, the current study examines the use of VPNs and proxies to access social media, in this way, it is possible to identify students' desire to access restricted content and various facilities of social media.

METHOD

Study design and participants

This cross-sectional, descriptive-analytical study was conducted on first-year female and male Medical Sciences students living in Ilam-Iran dormitories from January to March 2022. The inclusion criteria include being a first-year student, having a phone with internet connectivity, membership in smartphone social media, staying in the dormitories during the past semester, studying at the undergraduate level and exclusion criteria included leaving the dormitory during the study and students who had previously stayed in the dormitory, were suffering from depression, anxiety, were taking sedatives.

Sample size

Sample size was calculated as 143 given the prevalence of social media addiction equal with 22.8 % [16], precision (d)= 0.1 and 99% confidence interval. The sample size was calculated as 286 given the cluster sampling and design effect equal with two. In this study, 143 students selected from females' dormitories and 143 students from males' dormitories were studied.

Data collection

Cluster sampling was carried out in the dormitories. Dormitory students were accommodated in three dormitories for girls and three dormitories for boys. Two dormitories were randomly selected from each of the female and male dormitories. Students were examined in terms of entry and exit criteria. All students in that dormitory who met the entry criteria for the study were included based on the sample size, and the researcher provided questionnaires to the students.

Data collection tools

The data collection tools included two questionnaires which were completed in a self-report manner. The socio-demographic and characteristics activity in social media questionnaire were prepared based on a literature review and included questions on age, field of study, economic status, use of VPNs and proxies, etc.

Addiction to mobile based on social networks questionnaire was consisted of 23 questions and 4 subdomains of individual performance (questions 1 to 9), time management (questions 10 to 15), self-control (questions 16 to 19), and social communication (questions 20 to 23); each question had 5 options from completely disagree (score one), somewhat disagree (score two), no opinion (score three), somewhat agree (score 4), and to completely agree (score 5). The score range of the questionnaire was 23-115. The level of SMA was divided into 4 levels: lower than usual (score 23–46), regular user (score 46–69), on the verge of addiction (score 69–92), and addiction (score 92–115). The internal reliability of the questionnaire was calculated with a Cronbach's alpha of 91% [17].

In this study, the reliability of the addiction to mobile based on social networks questionnaire was determined by the test-retest in the two dimensions of repeatability (ICC = Intra Class Correlation) and internal consistency (Cronbach's alpha coefficient = Consistency). First, 15 students completed the questionnaire and 10 days later, the same people completed the questionnaire. Reproducibility (ICC) was 90% and Cronbach's alpha (Consistency) was 88%. Face validity

was used to determine the validity of the tools. Sociodemographic and characteristics activity in social media questionnaire were given to 10 faculty members of Ilam University of Medical Sciences, and necessary amendments were made in the questionnaires.

Statistical analysis

Data analysis was done with SPSS version 21 statistical software. Descriptive statistics including mean (Standard Deviation) and frequency (percentage) were used to describe sociodemographic questionnaire, characteristics activity in social media and SMA. Normality of quantitative data was checked with Skewness and Kurtosis. Sociodemographic questionnaires and social media activity characteristics of the groups (females and males) were compared with independent t-test, trend chi-square, Fisher's exact and chi-square. The overall score of SMA had a normal distribution, and independent t-test was used to compare the groups in terms of the overall score of SMA and subdomains. The general linear model was used to determine the predictor variables of SMA. In each group socio-demographic and characteristics activity in social media variables were entered in the univariate general linear model, then the variables that had P< 0.05 were entered in the multivariate general linear model. For all variables, the group of variables with the lowest or highest frequency was selected as a reference to make it easier to interpret the changes in other variables in comparison. The significance level in all tests was considered P< 0.05.

RESULTS

The mean ± SD age of female students was 21.3 ± 2.0 and that of male students was 21.9 ± 2.1. Female students used social media less than male students in classrooms (40% vs. 62%, P<0.001), and female students used social media less than male students in clinical and practical settings (33% vs. 54%, P<0.001). The most common time of activity in the social media of male and female students was at night before going to bed, and it was more common in female than males (66% vs. 52%, P = 0.033). The most commonly social media used by female and male students was Instagram, and females used it less than males (45% vs. 48%, P<0.001). The socio-demographic and characteristics activity in social media of the participants in this study are given in Table 1.

Table 1. Demographic characteristics of activities in social media of female (n=143) and male (n=143) students

Characteristics	Female		Male		p	Characteristics	Female		Male		p
	n	%	n	%			n	%	n	%	
Medicine	11	7.7	20	14		**The most common time of activity in social media**					0.033**
Nursing	21	14.7	42	29.4		**Morning before starting activities**	14	9.8	4	2.8	
Midwifery	18	12.6	-	-		**Night before sleep**	75	52.4	94	65.7	
Surgical technologist	19	13.3	14	9.8		**In classroom**	8	5.6	5	3.5	
Laboratory science	4	2.8	9	6.3		**In clinical settings**	-	-	1	0.7	
Health	43	30.1	20	14		**Rest time**	37	25.9	35	24.5	
Anesthesiology	11	7.7	7	4.9		**In vehicle**	9	6.3	4	2.8	
Biology	14	9.8	5	3.5		**The amount of daily activity in social media**					0.058****
Emergency medical technicians	-	-	22	15.4		**<30 minutes**	3	2.1	4	2.8	
Dentistry	2	1.4	4	2.8		**60 minutes**	8	5.6	12	8.4	

Economy status					0.067***	**120 minutes**	27	18.9	41	28.7	
Income = spent	96	67.1	78	54.4		**180 minutes**	39	27.3	29	20.3	
Income < spent	21	14.7	24	16.8		**>180 minutes**	52	36.4	71	49.7	
Income > spent	26	18.2	41	28.7		**Activity in Iranian social media**	61	42.7	50	35	0.225**
The cause of activity in social media					0.002**	**Used social media**					0.001****
Entertainment	74	51.7	53	37.1		**Telegram**	14	9.8	26	18.2	
Scientific study	11	7.7	28	19.6		**Instagram**	69	48.3	65	45.5	
Following news	17	11.9	19	13.3		**WhatsApp**	26	18.2	43	30.1	
Communication	37	25.9	30	21		**YouTube**	1	0.7	5	3.5	
Feeling lonely	4	2.8	13	9.1		**Facebook**	1	0.7	2	1.4	
Social media activity in classroom						**Google plus**	1	0.7			
	57	39.9	89	62.2		**LinkedIn**	-	-	1	0.7	
	47	32.6	77	53.8	<0.001**	**Line**	1	0.7	-	-	
						Bale	2	1.4	-	-	
						Using VPN or proxy	8	5.6	129	90.2	0.064***
							137	95.8			

The data indicate number (percent), unless otherwise specified. Mean (standard deviation).
*Independent t-test
**Chi square test
***Chi square for trend
****Fisher's exact

The mean (SD) of the overall score of SMA in females was 59.4 (18.8) less than that in males (63.3 (16.3), but there was no statistical difference between them (P = 0.063). Both groups were in the range of normal users of social media (score 46–69). Females and males had statistically significant differences in two SMA subdomain of individual performance and social communication (P<0.001) (Table 2).

Table 2. Comparing the overall score of social media addiction and its subdomain in female and male students

Social media addiction	Female (n=143)		Male (n= 143)		CI 95%*	P**
	Mean	**SD**	**Mean**	**SD**		
Individual performance (9 to 45)	20.6	8.4	24.02	7.7	-5.3 to -1.6	**<0.001**
Time management (6 to 30)	15.6	6.3	16.7	5.05	-2.4 to -0.2	0.104
Self-control (4 to 20)	11.1	3.4	11.4	3.5	-1.2 to 0.5	0.470
Social communication (4 to 20)	12.1	3.4	11.1	3.3	0.2 to 1.8	**0.013**
Overall score (23 to 115)	59.4	18.8	63.3	16.3	-8.0 to 0.2	0.063

*Confidence interval 95%

**Independent t-test

The multivariate general linear model showed that in female, the use of social media in clinical settings (P = 0.024, 95% CI: 1.1, 14.9, B = 8.0) was a predictor of SMA (adjusted R squared = 20 %). In male, the use of social media in clinical settings (P = 0.011, 95%CI: 2.0, 15.3, B = 8.6) and the amount of activity in social media during 24 hours, (P = 0.042, 95%CI: -37.1, -0.7, B =-18.9) were predictive factors of SMA (adjusted R squared = 16%) (Table 3).

Table 3. The relationship between socio demographic characteristics and overall score of addiction to social media addiction base on the multivariate general linear model in female and male students

Variable	Female		Male	
	B (95% CI) *	P value **	B (95% CI) *	P value **
Fields (Reference: dentistry)				
Medicine	15.1 (-11.6 to 41.8)	0.265	3.0 (-13.7 to 19.8)	0.718
Nursing	11.5 (-14.2 to 37.2)	0.377	-3.6 (-19.7 to 12.4)	0.655
Midwifery	9.2 (-16.1 to 34.4)	0.470	-	-
Surgical technologist	18.6 (-6.6 to 43.9)	0.147	-8.6 (-26.0 to 8.7)	0.325
Laboratory science	25.7 (-4.1 to 55.5)	0.091	-11.3 (-29.5 to 7.0)	0.225
Health	18.1 (-6.5 to 42.9)	0.148	-5.6 (-22.2 to 11.0)	0.508
Anesthesiology	-0.5 (-26.9 to 25.9)	0.971	1.3 (-18.0 to 20.6)	0.894
Biology	22.2 (-4.1 to 48.5)	0.096	-16.0 (32.7 to 0.6)	0.059
Emergency medical technicians	-	-	-8.9 (-29.1 to 11.2)	0.383
Economy status (Reference: income > spent)				
Income = spent	-6.2 (-13.9 to 1.5)	0.116	-4.2 (-10.5 to 1.9)	0.177
Income < spent	-3.2 (-13.7 to 7.1)	0.535	-2.1 (-10.8 to 6.6)	0.636
The amount of activity in social media (Reference: >180 min)				
< 30 minutes	6.4 (-11.9 to 24.7)	0.488	-18.9 (-37.1 to 0.7)	**0.042**
60 minutes	-11.8 (-23.9 to 0.3)	0.056	-5.6 (-17.5 to 6.3)	0.357
120 minutes	-8.0 (-15.9 to -0.1)	0.048	-4.7 (-11.7 to 2.3)	0.188
180 minutes	-2.9 (-10.5 to 4.8)	0.458	3.6 (-3.2 to 10.4)	0.297
Using social media at clinical setting (Reference: no)				
Yes	8.0 (1.1 to 14.9)	**0.024**	8.6 (2.0 to 15.3)	**0.011**
Using social media at classroom (Reference: no)				
Yes	3.7 (-3.2 to 10.6)	0.290	-1.1 (-7.8 to 5.6)	0.749

* Confidence interval 95% ** Multivariate general linear model test Female students: Adjust R squared= 0.208 Male students: adjust R squared= 0.167

DISCUSSION

In the current study, the majority of students spent a significant amount of time on social media, but within the range of use for normal users. Instagram was the most used social media. In both groups, use of social media in clinical settings, also in male students amount of daily activity in social media were predictors of SMA.

The results of the present study showed that female used social media significantly less than male in classrooms and clinical and practical settings. Other studies have found that gender has an effect on students' academic performance [18], and that there are gender differences in cognitive-motivational performance in the educational setting, female have more internal control, motivation, and time management in education, and female have a more adaptive approach to learning tasks [19]. In addition, male face more academic and behavioral problems and female with higher social skills have a higher grade point average and fewer disciplinary problems [18]. These factors may have led to better self-control and less use of social media in female.

In both groups, there was a common activity on social media at night before going to bed. In this study, first-year students were examined. Entering the university is accompanied by accepting new roles, meeting academic demands and adapting environment. Most

of the students' time during the day is spent adapting new conditions, and sometimes it is difficult to find time to balance various issues [20]. For this reason, students may have more time to use social media at night before going to bed.

In the present study, in both groups, Instagram was the most commonly used social media. In the study conducted by Ebrahimpour et al. (2015) in Iran with a survey of 1000 students from 7 universities of medical sciences and in the study conducted by Torkian et al. (2019) with a survey of 400 students at kerman university of medical sciences, the most commonly social media used by male and female students was Telegram [1, 2]. These results are not consistent with the present study. Due to the ease of using Instagram and the feeling of satisfaction from Instagram's social interactions and entertainment, which leads to a positive effect on Iranian users, the popularity of Instagram is growing day by day [21]. The reason for the non-alignment of the articles may be the more up-to-date reviews and results in the present study. However, in the study conducted by Aparicio et al. in Spain (2022), the most used social media by students was Instagram [3], which is consistent with the present study.

In the present study, male used Instagram significantly more than female. In a study conducted by Aparicio et al. (2022), male used Instagram more than female [3]. Instagram is one of the most commonly social media, which, while providing an opportunity to share photos and videos, also provides the opportunity to interact with and discuss the visual content produced. A significant part of the content of Instagram is personal sexual images that are uploaded by the users [22]; and sexual interests and behaviors play a role in the use of sexual Internet content in male [23]. The sexual attractiveness of women's images on Instagram is higher than for men [22] and men use Internet pornography [24], which may have contributed to boys' increased use of Instagram.

In the present study, about 90% of male and female students used VPNs and proxies, and there was no significant difference. Filtering social media reduces Internet speed and makes it difficult to access required sites [25] and students acknowledge that proxies and VPNs violate their privacy and jeopardize the possibility of collecting [26]. However, the desire to use various facilities of social medias [25] and access restricted content [26] leads to the use of proxies and VPNs to remove restrictions [25, 26].

In our study, overall score of SMA in females was lower than males, but there was no statistical difference between them. In the study conducted by Aparicio et al. (2022) in Spain on 278 male and female students, female students were more addicted to social media [3], the results are inconsistent with the present study. Azizi et al. (2019), in Kermanshah-Iran by examining 360 students using the Bergen social media addiction scale, reported that the SMA in male was significantly higher than female [7]. In the meta-analysis conducted by Zewde et al. in Africa (2022), male students were more SMA [24], Gender differences can affect various addictive behaviors, including Internet addiction, and it has been found that males have more addictive behaviors [27]. Males also participate in Internet pornography and online games [24], these factors may increase SMA.

In the present study, both groups were in the range of normal users of social media.

The people with higher social and economic status have more access to the internet, which in turn leads to more use of social media [10]. In the current study, the majority of students declared that their income was equal to their expenses. It is possible that these students have limited access to the internet and thus fall within the range of normal internet users. In the study of Azizi et al. (2019), which examined the students in Kermanshah-Iran, the students SMA was average [7], the results were not in line with the present study. The difference in socio-demographic, difference in evaluation methods, and different cutting points of tools can lead to different results in studies.

In the current study, SMA in the subdomain of individual performance in male was significantly lower than females and subdomain of social communication in male; it was significantly higher than females. According to the study of Suárez-Perdomo et al. (2022), social media can be a factor for procrastination in personal, professional, and academic work [28], SMA is more effective in reducing individual performance and procrastination [28]. In the current study SMA in females was lower than that of males; therefore, this factor may have led to a decrease in addiction to social media in the individual performance subdomain compared to male students. In the early stages of social media communication, women and men establish dyadic relationships, then women often expand their social media, while men continue to maintain dyadic relationships [(29)]. This factor may have led to an increase in SMA in female.

In the present study, male and female students' use of smartphone social media in the clinical and practical settings were predictors of SMA. Alkaabi et al. (2017) surveyed 84 students in the United Arab Emirates reported that students use smartphone social media in the classroom for different reasons, including chatting with family and friends, playing games, cheating, and using social media in the classroom leads to SMA [30]. In addition, academic procrastination [28] and negative effects on grade point average [12]. These factors might have led to inappropriate organization of time, lack of focus on course material and less motivation to learn in the classroom, and SMA in dimensions of individual performance, time management and self-control.

In the current study, the amount of activity on social media was a predictive factor of SMA and decreasing the hours of activity on social media was a protective factor of SMA in male students.According to a meta-analysis conducted by Zewde et al. (2022), using smartphone social media for more than 4 hours per day was one of the factors of SMA [24]. Torkian et al. (2022) reported that with the increase in time spent using social media, students are more at risk of SMA [2]. These studies showed the amount of activity in social media was predictive factor of SMA, and increasing hours of activity on social media is a risk factor and decreasing hours of activity on social media is a protective factor for SMA, these results are consistent with the present study. Excessive use of smart phone technology to enter social media leads to SMA due to the extent and acceptability of social media by the user [31].

The comparison of SMA among female and male first-year students living in dormitories was done for the first time in Iran, which is the strength of the present study. The first

limitation of the present study was that the questionnaire was completed by first-year students, it reduces the ability to generalize it to students studying in higher years. Another limitation of the present study was that, non-native students living in the dormitory were examined in the study; the results may not be generalizable to native students. It is suggested to compare native students with students living in the dormitory and conduct longitudinal studies in future studies.

CONCLUSION

In the present study, male and female students were in the range of normal users of smartphone social media. The most commonly social media used by female and male students was Instagram. Use of social media in clinical settings and amount of daily activity in social media were predictors of SMA. Educators and administrators in clinical settings and classrooms need to review educational rules and policies regarding use of smartphone social media. Administrators make decisions students use of social media appropriately and in a controlled manner, including implementing continuous monitoring, implementing incentive and punitive policies, educate on digital citizenship and time management skills for using social media.

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Author Contrubition: Researcher AM: developed the specific study idea, data gathering, preparation the article draft, F.Kh: Concept development, study design, preparation the article draft, H.N: Statistical and data analysis, preparation and revise the article draft, B.S: data gathering, Statistical and data analysis, preparation the article draft, E.B-V: Project leader, Concept development, study design, preparation the article draft. All authors read and approved the final manuscript. Also each author agreed both to be personally accountable for the author's own contributions and to ensure that questions related to the accuracy or integrity of any part of the work, even ones in which the author was not personally involved, are appropriately investigated, resolved, and the resolution documented in the literature.

REFERENCES

1. Ebrahimpour A, Rajabali F, Yazdanfar F, et al. Social Network Sites as Educational Factors. ACTA INFORM MED. 2016;24(2):134-8.
2. Torkian S, Malek-Mohammadi N, Mohammadizadeh M, Shahesmaeili A. Virtual social networks

addiction and high-risk group among health science students in Iran: a latent class analysis. Iran J Health Sci 2022;10(1):1-9.

3. Aparicio Martínez P, Ruiz-Rubio M, Perea-Moreno A-J, et al. Gender differences in the addiction to social networks in the Southern Spanish university students Author links open overlay panel. Telematics and Informatics. 2020;46: 101304.

4. Shaw M, Black DW. Internet addiction: definition, assessment, epidemiology and clinical management. CNS drugs. 2008;22(5):353-65.

5. Salarvand S, N-Albatineh A, Dalvand S, Baghban-Karimi E, Ghanei-Gheshlagh R. Prevalence of Internet Addiction Among Iranian University Students: A Systematic Review and Meta-analysis. Cyberpsychol Behav Soc Netw. 2022;25(4):213-22.

6. Lozano-Blasco R, Latorre-Cosculluela C, Quílez-Robres A. Social Network Addiction and Its Impact on Anxiety Level among University Students Sustainability. 2020;12(13):5397.

7. Azizi S-M, Soroush A, Khatony A. The relationship between social networking addiction and academic performance in Iranian students of medical sciences: a cross-sectional study. BMC Psychol. 2019;7(28):1-8.

8. Mane D, Salunkhe D, Batta D, Agarkhedkar D, Kumar D, Bharaswadkar D. Internet addiction in school going adolescents of different socio economic classes in Western India. Pediatr Rev Int J Pediatr Res. 2018;5:60-5.

9. Zhong Y, Ma H, Liang Y-F, Liao C-J, Zhang C-C, Jiang W-J. Prevalence of smartphone addiction among Asian medical students: A meta-analysis of multinational observational studies. Int J Soc Psychiatry. 2022;86(6):1171-83.

10. Kayri M, Günüç S. Comparing internet addiction in students with high and low socioeconomic status levels. Addicta Turkish J Addict. 2016;3:165-83.

11. Abbaspour S, Abbasi-Asfjir A, Rahmani-Firoozjah A. Meta-analysis of studies on dormitory life in Iran. Iranian Journal of Educational Sociology. 2021;4(3):148-18.

12. Lepp A, Barkley J-E, Karpinski A-C. The relationship between cell phone use and academic performance in a sample of u.s. college students. SAGE Open. 2015;5(1):1-9.

13. Tang C, Koh Y. Online social networking addiction among college students in Singapore: Comorbidity with behavioral addiction and affective disorder. Asian J Psychiatr. 2017;25:175-8.

14. Mohammadi S, Valinejadi A, Amini-Samanm J, et al. Assessment of addiction to internet, smartphone and social networks among students of medical sciences: a cross sectional study. Electronic Journal of General Medicine 2018;15(4):1-9.

15. Barnes S-J, Pressey A-D, Scornavacca E. Mobile ubiquity: Understanding the relationship between cognitive absorption, smartphone addiction and social network services. Computers in Human Behavior. 2019;90:246-58.

16. Salari N, Zarei H, Hosseinian-Far A, Rasoulpoor S, Shohaimi S, Mohammadi M. The global prevalence of social media addiction among university students: a systematic review and meta-analysis. Journal of Public Health. 2023;33:223-36.

17. Khajeahmadi M, Pooladi S, Bahreini M. Design and assessment of psychometric properties of the addiction to mobile questionnaire based on social networks. IJPN. 2016;4(4):43-51.

18. Tan K, Shin-Oe J, Dung -Hoang -Le M. How does gender relate to social skills? Exploring differences in social skills mindsets, academics, and behaviors among high-school freshmen students. Psychology in the Schools. 2018;55(4):429-42.

19. Dabbagh-Ghazvini S, Khajehpour M. Gender differences in factors affecting academic performance of high school students. Procedia - Social and Behavioral Sciences. 2011;15:1040-5.

20. Roe-Clark M. Negotiating the freshman year: challenges and strategies among first-year college students. Journal of College Student Development 2005;46(3):296-316.

21. Zohourian A, Sajedi H, Yavary A. Popularity prediction of images and videos on Instagram. International Conference on Web Research (ICWR); Tehran, Iran 2018 4th

22. Plieger T, Groote O, Hensky R, et al. The association between sexism, self-sexualization, and the evaluation of sexy photos on instagram. Front Psychol. 2021;12(716417):1-11.

23. Doornwaard S-M, van-den E-R, Baams L. Lower psychological well-being and excessive sexual interest predict symptoms of compulsive use of sexually explicit internet material among adolescent boys. J Youth Adolesc. 2016;45(1):73-84.

24. Zewde E-A, Tolossa T, Tiruneh S-A, et al. Internet Addiction and Its Associated Factors Among African High School and University Students: Systematic Review and Meta-Analysis. Front Psychol. 2022;21(13):847274.

25. Saleck-Pay B, Hosseini S-H. Why do Students use Virtual Social Networks in Iran: a System Approach. Interdisciplinary Description of Complex Systems : INDECS,. 2013;11(1):108-22.

26. Dutkowska-Zuk -A, Hounsel -A, Morrill -A, Xiong

-A, Chetty -M, Feamster -N. How and Why People Use Virtual Private Networks. USENIX Security Symposium. 2022 31(22):3451-65.

27. Di-Nicola M, Ferri V, Moccia L, et al. Gender differences and psychopathological features associated with addictive behaviors in adolescents Front Psychiatr. 2017;8:2-11.

28. Suárez-Perdomo A, Ruiz-Alfonso Z, Garcés-Delgado Y. Profiles of undergraduates' networks addiction: Difference in academic procrastination and performance. Computers & Education. 2022;181(10445):1-10.

29. Krasnova H, Veltri N-F, Eling N, Buxmann P. Why men and women continue to use social networking sites: The role of gender differences Author links open overlay panel. The Journal of Strategic Information Systems. 2017;26(4):261-84.

30. Alkaabi S, Robert-Albion P, Redmond P. Social Network Misuse in the Classroom and Its Impact on Male Student Motivation in UAE Tertiary Education. IAFOR Journal of Education 2017;5(SI).

31. Salehan M, Negahban A. Social networking on smartphones: When mobile phones become addictive. Computers in Human Behavior. 2013;29(6):2632-9.