



Prevalence of social media addiction and its related factors among students of nursing and midwifery in Iranian context: A cross-sectional study

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Abstract

Background and aims: This study aimed to identify the status of social media addiction (SMA) and some related factors in nursing and midwifery students in Iran.

Methods: In this cross-sectional study, 284 Nursing and Midwifery students participated. The study was conducted from October 4, 2021 to February 16, 2022. Sampling was done by simple random method. The data collection tool was Bergen's Social Media Addiction Scale (BSMAS). Data analysis was performed using SPSS version 22. Pearson correlation and multivariate linear regression tests were used to analyze the data.

Results: 234 (82.39%) of the students had some level of social media addiction. There was a statistically significant relationship between the hours of using social media during the day and the duration of using these media with addiction ($\beta=0.537$, $P<0.001$). There was a significant relationship between SMA and living single and independently ($\beta=0.58$, $P=0.032$). SMA had no significant relationship with other demographic characteristics of students ($P>0.05$). A statistically significant relationship was also between SMA and students' academic performance ($\beta=-0.412$, $P<0.001$).

Conclusion: The prevalence of SMA in the study population was alarmingly high. This emerging social problem should be considered in the community of nursing and midwifery students. Because this type of addiction can affect the quality and quantity of nursing care, with the development of attractive social networks dedicated to education and learning, these networks should be directed toward useful student goals.

Keywords: Addiction, COVID-19, Social media addiction, Smartphone, Internet addiction

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Introduction

Today, the problem of social media addiction (SMA) has become alarming with the proliferation of smartphones (1). This is especially evident among young university people (2). People with this type of addiction often have a strong desire to connect to social media, loss of self-control over Internet use, withdrawal symptoms (such as anxiety, depression, and irritability if they do not have access to social media), tolerance (need to gradual increase) Internet connection time to achieve the desired results, severe interference in daily life with reduced physical activity and gradual abandonment of other previous pleasures (3,4).

The prevalence of this type of addiction in the pre-Corona pandemic period in the world has grown significantly and has been increasing. According to available statistics from different parts of the world, the prevalence of this disorder has been from 6% in Japan to 21% in the Philippines (5,6). Its prevalence in Iran was estimated at 20% pre-COVID-19 (7).

Prevalence of COVID-19 disease and the

implementation of policies to limit social contact (8,9), the prevalence of this type of addiction has increased, especially at a young age (10,11). During the COVID-19 pandemic, university education was conducted online, and students used social media to get information and find answers to their questions. For this reason, the use of social media has become an important part of students' use of the Internet (12). On the other hand, previous research has shown that the use of the Internet to reduce stress and anxiety has increased during the COVID-19 pandemic, which can directly impact the increase of the Internet and SMA (13-15). During this pandemic, social distancing, distance education, and curfew regulations were strongly recommended by health organizations to curb the spread of the disease, disrupting many everyday personal interactions (16,17). For these reasons, people who spend more time at home are likelier to become addicted to the Internet (18).

Finally, despite the large number of studies conducted in the pre-COVID-19 period (19-22), at the time of the

COVID-19 pandemic, studies in this field are limited in Iran and even in the world; therefore, the present study was conducted to identify the status of SMA and some related factors in students of Zanjan School of Nursing and Midwifery.

Materials and Methods

Study design

The present study was an observational study conducted from October 4, 2021 to February 16, 2022.

Participants

Inclusion criteria included:

- 1- Being a student with a bachelor's or master's degree
- 2- Being employed at Zanjan School of Nursing and Midwifery
- 3- Having consented to participate in the study.

To estimate the required number of samples using Cochran's Formula, with N (population size)=624, $q=p=0.5$, and $d=0.05$, a sample size of approximately 238 was calculated. However, 300 questionnaires were prepared and distributed among eligible students to account for incomplete questionnaires. Of the 300 distributed questionnaires, 16 were removed due to incompleteness. This left 284 questionnaires that were included in the statistical analysis.

A simple random sampling method was used in this study. First, a list of all students enrolled in the Zanjan School of Nursing and Midwifery was obtained from the Education Department. Each student was assigned a number, and a sampling framework was prepared. Using a table of random numbers, 300 students were selected from the sampling framework to participate in the study.

Measures Tools

To collect data, we used two questionnaires. The first questionnaire was the Bergen Social Media Addiction Scale (BSMAS). BSMAS was designed in 2012 by Andreassen et al. at the University of Bergen. This scale is a modified version of the Bergen Facebook Addiction Scale (BFAS). The BSMAS is a standardized self-report questionnaire that assesses the use of social media over the past year. Many studies have used this questionnaire (21, 23-26). This questionnaire is one of the best tools designed and developed to assess the status of SMA. BSMAS consists of 18 items, all three reflecting one of the six main elements of addiction (salience, mood modification, tolerance, withdrawal, conflict, and relapse). All BSMAS items are scored on a 5-point Likert scale from 1 to 5. Therefore, the obtained total scores are between 18-90. According to the scores obtained from the questionnaire, the samples are in one of the groups: normal use of social media (18-39), moderate SMA (40-69), and severe SMA (70-90). The psychometric properties of the Persian version of BSMAS have been investigated and confirmed by Lin et al. (2017) in Qazvin using confirmatory factor analysis and Rasch models; Comparative fit index = 0.993;

Tucker-Lewis index = 0.989; root mean square error of approximation = 0.057; standardized root mean square residual = 0.039] and Rasch (infit MnSq = 1.28–0.88; outfitting MnSq = 1.22–0.86) confirmed the unidimensionality of the BSMAS (27). In this study, we also used Cronbach's alpha coefficient to measure the scale's reliability ($\alpha = 0.891$).

The second questionnaire was designed to collect information about students' demographic variables such as age, gender, marital status, number of siblings, field of study, semester, interest in the field, degree (bachelor or master student), financial status, and grade point average (GPA).

Procedure

After approving the proposal of this study in the Zanjan University of Medical Sciences' research and technology vice challenger, we received a letter of recommendation from that unit; we presented it to the head of Nursing and Midwifery School and obtained permission from her. Random sampling was performed. The questionnaires were delivered to the selected students after stating the purpose of the study and obtaining informed consent to participate in the research. If students needed help and guidance to complete the questionnaires, the researcher provided them. After completing the questionnaires and coding them, the total GPA of the students participating in the study was obtained from the Deputy of Education of Zanjan School of Nursing and Midwifery.

Statistical methods

To analyze the data, descriptive and analytical statistical methods were used. Descriptive statistical methods were used to examine students based on demographic variables and describe how to use social media. Pearson correlation test investigated the relationship between SMA and students' academic performance. The regression model was used with the enter method to identify potential predictors of SMA. Dummy variables were created for categorical variables. All statistical calculations for this study were performed using SPSS version 22, with a significance level set at 0.05.

Results

Characteristics of the participants

Of 284 students participating in the study, 63.73% were female. The mean (\pm SD) age of participating students was 22.92 ± 2.93 years. Most students (92.6%) were studying for a bachelor's degree. The most used social media was 62.3% of students participating in the Instagram study. The main goal of 40.1% of students was to use social media for entertainment. Most students (95.4%) used smartphones to connect to social media. Students participating in the study used social media for an average of 4.04 ± 1.84 hours per day (Table 1).

Prevalence of SMA

The average score obtained by students on the BSMAS was

Table 1. Demographic and educational characteristics of the participants (n=284)

Variables	Status	N0. (%)
Gender	Female	181 (63.73)
	Male	103 (36.27)
Marital status	Single	247 (86.97)
	Married	37 (13.03)
Type of living	In the dormitory	143 (50.35)
	Single and Independent	7 (2.47)
	With parents	108 (38.03)
	With spouse	26 (9.15)
Economic situation	Poor	15 (5.3)
	Fair	192 (67.6)
	Good	77 (27.1)
Field of study	Nursing	135 (47.54)
	Operating room technician	35 (12.32)
	Anesthesia	47 (16.55)
	Midwifery	67 (23.59)
Grade	Bachelor	263 (92/6)
	Master	21 (7.4)
Probation	Yes	8 (2.8)
	No	276 (97/2)
The degree of interest in the field of study	Not at all	6 (2.1)
	Slightly	31 (10.9)
	Moderately	131 (46.1)
	Very	88 (31)
	Extremely	28 (9.9)
Thinking about withdrawing from the field of study	Yes	29 (10.2)
	No	255 (89.8)
Thinking about changing the field of study	Yes	136 (47.9)
	No	148 (52.1)
Interest in continuing education in the current field	Yes	173 (60.9)
	No	111 (39.1)
Interest in continuing education in another field	Yes	105 (37)
	No	179 (63)
Use of social media with the family	Never	15 (5.3)
	Rarely	107 (37.7)
	Sometimes	115 (40.5)
	Very often	44 (15.5)
	Always	3 (1.1)
Use social media while driving	Never	209 (73.6)
	Rarely	61 (21.5)
	Sometimes	14 (4.9)
Most used social media	Twitter	7 (2.5)
	LinkedIn	1 (0.4)
	Instagram	177 (62.3)
	YouTube	5 (1.8)
	WhatsApp	47 (16.5)
	Telegram	47 (16.5)

Table 1. Continued.

Variables	Status	No. (%)
Purpose of using social media	Education and learning	41 (14.4)
	Follow the news	9 (3.2)
	Connect with friends and acquaintances	56 (19.7)
	Make friends and build relationships	22 (7.7)
	Download songs, photos, and videos	24 (8.5)
	Entertainment	114 (40.1)
	Employment and trade	18 (6.3)
A tool for connecting to social media	Smartphone	271 (95.4)
	Laptop	11 (3.9)
	Personal Computer	2 (0.7)
		Mean ± SD
Age		22.92 ± 2.93
Number of siblings		1.99 ± 1.47
Grade point average		16.05 ± 1.34
Number of approved educational courses		77.63 ± 36.64
Number of disapproved educational courses		1.06 ± 2.06
Number of probated semesters		0.03 ± 0.19
Hours of using social media during the day		4.04 ± 1.84

Abbreviation: SD, standard deviation.

55.03 ± 14.34. 82.39% of students had levels of addiction (Table 2 and Figure 1).

Demographic variables and SMA

There was a significant relationship between addiction to social media and living single and independently ($\beta = 0.58$, $P = 0.032$). Other demographic variables, including age ($\beta = 0.109$, $P = 0.066$), gender ($\beta = 0.044$, $P = 0.460$), marital status ($\beta = -0.018$, $P = 0.768$), number of children ($\beta = 0.159$, $P = 0.346$), number of siblings ($\beta = 0.019$, $P = 0.752$), and financial status ($\beta = -0.024$, $P = 0.685$), were not statistically significantly related to SMA (Table 3).

Social media variables and SMA

The hours of using social media during the day ($\beta = 0.628$, $P < 0.001$) and the amount of social media use with family ($\beta = 0.258$, $P = 0.005$) had a statistically significant relationship with SMA. In addition, the hours of use of students participating in the study of social media during the day had the highest predictive power ($R^2 = 0.395$) of the variance of SMA (Table 4).

SMA and academic performance

Pearson correlation test and Linear regression showed that SMA had a negative and statistically significant relationship with students' GPA ($\beta = -0.412$, $P < 0.001$). Nursing field of study ($\beta = 0.298$, $P < 0.001$), thinking about changing the field of study ($\beta = 0.264$, $P < 0.001$) was significantly related to SMA (Table 5).

Discussion

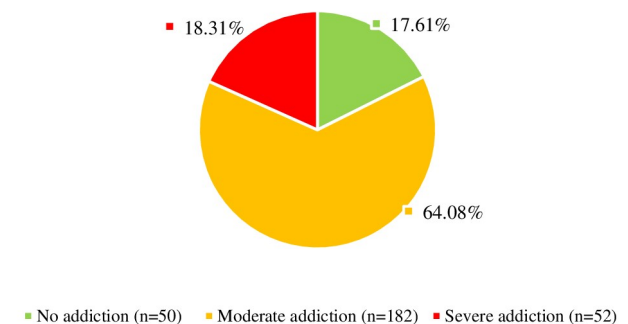
The state of addiction to social media

This study aimed to describe the status of SMA among

Table 2. Status of social media addiction (SMA) in students (n=284)

Variables	Level	No. (%)
Social Media Addiction (SMA)	No addiction	50 (17.61)
	Moderate addiction	182 (64.08)
	Severe addiction	52 (18.31)
Overall BSMAS score		55.03 ± 14.343

Abbreviations: SD, Standard Deviation; BSMAS, Bergen Social Media Addiction Scale.

**Figure 1.** Frequency of participants by level of addiction to social networks.

students of the School of Nursing and Midwifery in Zanjan, Iran, and its predictors in 2021-2022. The results showed that SMA among students is alarmingly high; More than 80% of students are addicted to these media, from mild to severe. In a similar study conducted in Iran, Azizi et al showed that over 80% of medical students in Kermanshah have a moderate and severe addiction. If we add a mild level of addiction to their statistic, nearly 100% of students participating in their study were addicted (21). These statistics show that SMA among students during the COVID-19 pandemic has increased significantly compared to before COVID-19. For example, in the pre-

Table 3. Multivariate linear regression test on relationship and prediction of social media addiction (SMA) based on demographic variables

Predictor variables	B	SE	β	t	P value
Age	0.545	0.954	0.159	0.571	0.572
Gender*					
Male	-1.252	6.875	-0.033	-0.182	0.857
Marital status**					
Married	-0.747	2.532	-0.018	-0.295	0.768
Number of children	3.787	3.967	0.159	0.955	0.346
Number of siblings	0.185	0.583	0.019	0.317	0.752
Type of living***					
Living alone	49.292	21.883	0.58	2.253	0.032
With parents	14.739	8.512	0.394	1.732	0.094
With spouse	14.763	7.715	0.49	1.913	0.066
Economic situation****					
Moderate	-0.931	3.858	-0.03	-0.241	0.809
Good	-1.508	4.061	-0.047	-0.371	0.711

* Reference: Female, ** Reference: Single, *** Reference: In the dormitory, **** Reference: Poor.

$P < 0.05$ is considered statistically significant.

Abbreviations: B: unstandardized beta coefficient; SE, standard error of B; β , standardized regression coefficient.

Corona period, SMA among students in India had been reported at 36.9% (28), Spanish at 33.8% (20), Singapore at 29.5% (29), Saudi Arabia at 67.5% (30), and Malaysia at 36.9% (31).

During the COVID-19 pandemic, studies were conducted on social media and Internet addiction, which are contradictory; For example, its prevalence is reportedly 83.5% among Malaysian medical students (32) and 32.4% among Chinese students (33). Tahir et al reported that 67.6% of medical students in the seven Dominican Republic, Egypt, Guyana, India, Mexico, Pakistan, and Sudan were addicted to the Internet during the COVID-19 pandemic (34). The variable prevalence of this type of addiction in different societies seems to be various socio-cultural factors. However, a comparison of pre-and post-Corona period statistics shows a significant increase in this post-COVID-19 in all communities. The outbreak of COVID-19 disease has caused an extraordinary change in individuals' normal individual and social life (35,36). Due to physical distance and quarantine, many social interactions have been transferred to social media (37). In this regard, Brailovskaia et al showed that addiction to social

Table 4. Multivariate linear regression test on relationship and prediction of social media addiction (SMA) based on how to use social media

Predictor variables	B	SE	β	t	P value
Hours of using social media during the day	4.18	0.409	0.537	10.225	<0.001
Use of social media with the family*					
Rarely	2	3.113	0.068	0.643	0.521
Sometimes	4.668	3.16	0.16	1.477	0.141
Very often	10.2	3.593	0.258	2.838	0.005
Always	15.473	6.983	0.11	2.216	0.028
Use social media while driving*					
Rarely	-1.996	1.639	-0.057	-1.218	0.224
Sometimes	-3.563	3.1	-0.054	-1.149	0.251
Most used social media**					
YouTube	-3.372	12.54	-0.031	-0.269	0.788
Twitter	3.074	11.938	0.033	0.257	0.797
WhatsApp	6.904	11.555	0.179	0.597	0.551
Telegram	2.205	11.483	0.057	0.192	0.848
Instagram	5.876	11.533	0.199	0.51	0.611
Purpose of using social media***					
Entertainment	2.602	4.986	0.089	0.522	0.602
Education and learning	0.095	5.301	0.002	0.018	0.986
Employment and trade	-1.778	5.879	-0.03	-0.302	0.763
Make friends and build relationships	2.732	5.698	0.051	0.48	0.632
Download songs, photos, and videos	5.194	5.628	0.101	0.923	0.357
Connect with friends and acquaintances	1.063	5.171	0.03	0.206	0.837
A tool for connecting to social media****					
Smartphone	2.072	7.993	0.03	0.259	0.796
Laptop	-0.575	8.666	-0.008	-0.066	0.974

* Reference: Never, ** Reference: LinkedIn, *** Reference: Follow the news, **** Reference: Desktop Computer

$P < 0.05$ is considered statistically significant.

Abbreviations: B: unstandardized beta coefficient; SE, standard error of B; β , standardized regression coefficient.

Table 5. Multivariate linear regression test on the relationship and prediction of social media addiction (SMA) based on academic performance

Predictor variables	B	SE	β	t	P value
(Constant)	124.56	36.28		3.433	0.001
Grade point average	-3.812	0.645	-0.356	-5.909	<0.001
Field of study*					
Nursing	-5.224	2.486	-0.182	-2.101	0.037
Midwifery	-3.969	2.901	-0.118	-1.368	0.172
Anesthesia	-3.17	2.863	-0.082	-1.107	0.269
Grade**					
Master	6.69	3.689	0.122	1.813	0.071
Semester	3.456	1.847	0.438	1.871	0.062
Number of approved educational courses	-0.181	0.094	-0.462	-1.916	0.056
Number of disapproved educational courses	0.722	0.455	0.104	1.588	0.114
Probation***					
No	-7.723	16.07	-0.089	-0.48	0.631
Number of probated semesters	-18.48	13.48	-0.251	-1.371	0.172
The degree of interest in the field of study****					
Slightly	-8.944	5.639	-0.195	-1.586	0.114
Moderately	-6.838	5.568	-0.238	-1.228	0.22
Very	-8.905	5.851	-0.288	-1.522	0.129
Extremely	-9.943	6.127	-0.207	-1.623	0.106
Interest in continuing education in the current field***					
No	3.149	1.735	0.107	1.816	0.071
Interest in continuing education in another field***					
No	2.967	1.76	0.1	1.686	0.093
Thinking About Changing the Field of Study***					
No	-4.899	1.772	-0.171	-2.765	0.006
Thinking about withdrawing from the field of study***					
No	2.939	2.812	0.062	1.045	0.297

* Reference: Surgical technologist, ** Reference: Bachelor, *** Reference: Yes, **** Reference: Not at all.

$P < 0.05$ is considered statistically significant.

Abbreviations: B: unstandardized beta coefficient; SE, standard error of B; β , standardized regression coefficient.

media is higher in the quarantine group than in the non-quarantine group (38). On the other hand, the COVID-19 pandemic has caused depression, anxiety, and stress in communities (38,39), and these mental statuses can potentially increase addiction to social media (40). It should not be forgotten that immersion in social media such as Facebook and Instagram allows people to temporarily forget their unpleasant feelings and experience positive emotions (41).

Demographic variables and SMA

Like some previous studies (42-45), our study showed no significant relationship between gender and SMA. This is while a group of studies showed contradictory results; For example, Shafi et al reported that women are more addicted to SMA than men (46), and this correlation is significant among students (47,48). In contrast, Azizi et al showed that addiction to SMA is significantly higher in male students than in female students (21). Ching et al also reported that the male gender is the most important predictor of Internet addiction (31). Chou et al reported

that men were more likely than women to become addicted to the Internet because of their increased use of sexual content (49). Given the contradictory results of various studies, the role of time and place is important; therefore, more studies are needed to clarify the reason for this discrepancy.

Our study showed a significant relationship between the hours of using social media during the day and SMA; this finding confirms the results of previous studies (30,39,43). Anand et al reported that the amount of time a person spends on the Internet is an important factor that increases the risk of Internet addiction. Medical students who use the Internet for more than three hours a day for extracurricular activities have a higher rate of Internet addiction (50). Boonvisudhi and Kuladee suggested that Internet use for more than five hours daily was significantly associated with Internet addiction and depression (51). In addition, various studies conducted during the COVID-19 pandemic have shown that people using social media have increased dramatically, leading to an increase in SMA (15,52-55).

SMA and academic performance

Our study showed that SMA can predict students' academic performance like any other addiction and is significantly and negatively related. In the study of Azizi et al, the negative relationship between addiction to social media and all medical students' overall grade point average in Kermanshah was discussed (21). Abbasi et al reported that smartphone addiction negatively affects students' academic performance (56). Boonvisudhi and Kuladee also showed that medical students' academic problems are significantly related to their Internet addiction (51).

Also, our study showed a significant relationship between addiction to social media and the nursing field among students ($P=0.037$).

Limitations

The limitations of this study included the following: First, relying on information obtained by students through self-report and completing a questionnaire; therefore, the findings will be questionable to some extent, and the bias of desirable social responses was one of the threats to the study's validity. Second, this study was cross-sectional in terms of method; therefore, it was impossible to explain the causal relationship between the variables. Third, the study was performed only on Zanjan School of Nursing and Midwifery students. Considering the vulnerability of SMA, like any other addiction of underlying/contextual factors, the generalizability of results to different social groups from other points should be done carefully. We used only the GPA as students' academic performance as a final limitation.

Conclusion

The amount of time spent on social media, followed by the prevalence of SMA among students during the COVID-19 pandemic, has become alarmingly higher than before the pandemic. Therefore, policymakers must take care of SMA and prioritize this issue.

This study provides evidence of the adverse effects of the COVID-19 epidemic on social media use and related risk factors. The prevalence of SMA among students during the COVID-19 epidemic has become alarmingly higher than before the epidemic. This situation can affect the quality of current and future nursing care in two ways; first, using smartphones during internships can affect the relationship between nursing students and patients and reduce the quantity and quality of care. Second, considering the significant and negative correlation between academic performance and this type of addiction, it can be concluded that in the future, we will see graduates in care providers who need a strong scientific and skill base to provide quality patient care. Given the importance of the quality of nursing care on patient-related processes, this emerging social problem should be considered, at least in the community of nursing students. Therefore, policymakers must take care of SMA and prioritize this issue.

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Competing Interests

None.

Ethical Approval

This paper is part of an approved research project (ID: A-11-86-24) approved by the Bio-Medical Research Ethics Committee of Zanjan University of Medical Sciences with the ID: IR.ZUMS.REC.1400.257. Informed consent was obtained from the participants. The questionnaires were anonymous. The principle of students' autonomy was observed in participating in the study.

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