Assessing the Virtual Social Networks Usage among Nursing Students: A Cross-Sectional Descriptive Study

Abstract

Background: Nowadays, virtual social networks are among the most essential communication tools in the exchange of science, knowledge, and technology and are very popular among different peoples of the society, especially nursing students. They can also influence academic success. The present study was aimed to investigate the use of social networks among nursing students of Tabriz University of Medical Sciences. **Materials and Methods:** This study adopts a descriptive cross-sectional design and employed 406 nursing students in 2018 by means of the convenience sampling method. For data collection, a researcher-made questionnaire consisting of demographic characteristics and social network usage was used. Descriptive and inferential statistics were used to analyze the data. **Results:** The mean (SD) of social networking usage was 116.81 (17.20) out of the achievable score range of 38 to 190, where the highest and lowest scores were related to dimensions of content sharing (73.56%) and unconventional issues (51.00%), respectively. There was a significant statistical relationship between total score of social networking usage which included the variables of grade point average (r = -0.17, $p = 0.000$), average daily study hours in non-exam periods (r = -0.10 and $p < 0.04$), family income ($F_{2,375} = 6.28$, $p < 0.001$), number of siblings ($F_{4,350} = 4.98$, $p < 0.001$), and academic semester ($F_{6,376} = 2.12$, $p < 0.05$). **Conclusions:** Given the high percentage of students enrolled and the aim of using these networks, proper planning for the management of cyberspace is necessary to take advantage of the benefits of social networks and reduce their disadvantages.

Keywords: *Academic success, students, nursing, social networking*

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Introduction

The growth rate of social networks is to the extent that the total number of users in the most popular virtual networks is high. According to digital reports in 2021, more than 4.66 billion people now use the internet, while social media users have passed the 4.20 billion mark. Nearly 60 percent of the world's population is already online, and the latest trends suggest that more than half of the world's total population will be using social media by the middle of this year.[1] By 2023, the number of social network users in the United States is forecasted to increase to approximately 243 million.[2] According to Jam-e-Jam online reports, 70 percent of the Iranians use at least one virtual social network.[3] Moreover, social networks are increasingly growing, especially among university students.[4] Virtual social networks are contexts where individuals find the opportunity to introduce themselves, reveal their personality traits, communicate with others, and preserve these relations in those environments.[5] These networks have the potential to make basic changes in the social life of individuals, particularly university students. Although the activity in such networks facilitates communication with others,[6] by reducing the amount of study, it disrupts students' academic achievement.[7] One of the adverse effects of such networks, especially for students, is the increase in anxiety and stress levels.[8] Despite their harmful effects, social networks can be used optimally in educational and therapeutic processes.[9]

Today's nursing students are nurses of tomorrow's health system. Thus, identifying the factors that affect the mental health and academic achievement of this group is particularly important. Moreover, the presence of social networks cannot be removed or diminished from students' lives

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as they become more attractive day by day despite all their attractiveness. There are studies on the use of social networks among students, especially nursing students, but due to the cultural context, individuals may be involved in how they use these networks.[10,11] It is believed that the cultural and social contexts of individuals may play a role in how these networks are used.[12] The aim of this study was to determine social networks' use among nursing students of Tabriz University of Medical Sciences.

Materials and Methods

The present adhered to a descriptive cross-sectional design. The participants included nursing students of Tabriz University of Medical Sciences in the academic year of 2018 (October to December). The sample size was calculated to be 324 students in accordance with the criteria presented by Simpson *et al*., (2014)[13] and considering 5% margin of error, 95% Confidence Level (CI) and the probability of a 10% attrition in samples. In order to investigate more samples, all students of nursing Bachelor of Science at Tabriz University of Medical Sciences (n = 406) were selected through the convenience sampling method and were selected based on the following criteria. The inclusion criteria were attendance in at least one semester at university, membership in one of the social networks, not having physical and mental problems (as reported by them), and also consent to participate in the study. Incomplete and invalid information was excluded.

The first data collection tools in this study were demographic characteristics, including age, sex, marital status, semester, average family income, second occupation, and type of phone used. The second tool was a researcher-made questionnaire on social network usage. This multi-part questionnaire includes the type of social network, membership information, and extent, how to use these networks, the reason for membership, the dangers of joining the network, and students' use of social networks in learning.

The questionnaire consists of 49 questions with 6 sub-scales of individual communication (questions 1 to 12), doing academic work (questions 13 to 20), internet addiction and irregular consumption (questions 21 to 31), and learning and finding content. Science (questions 32 to 39), networking, and privacy (questions 40 to 45) are ethical issues (questions 46 to 49). Each participant receives 7 separate scores, with 6 scores for each component and one total score for social media use. The answers are in a 5-degree sequential order, with the lowest and highest scores of 49 and 245, respectively. There are two open-ended questions at the end of the questionnaire: 1) What do you often use the Internet for? 2) W h a t have been the consequences of social media use for you? To determine the face and content validity of the social networking usage questionnaire, the tool was assessed by 10 professors of Tabriz University of Medical Sciences,

and corrections were made after receiving comments. To determine the reliability of the tool, the questionnaire was distributed among 30 undergraduate students for the pilot study. After data analysis, the Cronbach's alpha coefficient for the entire questionnaire was found to be 0.81. Data were analyzed using SPSS v. 11.5 (SPSS11.5, Inc, USA). Descriptive statistics (mean and standard deviation) and inferential statistics (correlational tests) such as Pearson correlation coefficient, t-test, and ANOVA were used to analyze the data.

Ethical considerations

After obtaining permission from the Vice Chancellor for Research of Tabriz University of Medical Sciences, the researcher obtained informed consent from the participants by attending the classrooms, introducing the research, explaining the research objectives, describing voluntary participation in research, and ensuring the confidentiality of information. Then, the questionnaire was administered, and after a week, the completed questionnaire was received. All questionnaires were returned. The ethical code of the study is IR.TBZMED.REC.13970640.

Results

Among 406 nursing students participating in the study, 382 subjects (94.08%) returned the completed questionnaires. Some of the 205 (53.50%) participants were female, and the mean and standard deviation of age, mean grade of the previous semester, and high school diploma grade of participants were 22.09 (3.55), 16.53 (1.60), and 18.04 (1.48), respectively. Besides, 338 of the respondents were single (88.50%), 231 had dormitory residence (60.30%), 363 had no children (96%), and 303 were unemployed (79.70%). The mean and standard deviation of study hours of students in the exam and non-exam periods were 8.09 (3.24) and 1.72 (1.16), respectively, and daily study hours of school and non-school materials were 1.19 (0.87) and 1.01 (0.73), respectively. Other demographic characteristics of participants are reported in Table 1.

In terms of the students' internet usage, the mean (SD) daily time in hours and monthly data usage in gigabytes were 4.11 (2.59) and 3.38 (1.17), respectively. Students mostly used the internet for social networks such as Telegram and Instagram. In their opinion, the most important consequences of using social networks were sleepiness and reduced attention in the classroom. The most widely used virtual social networks among participating students included Telegram (93.80%), Instagram (77.30%), WhatsApp (46.80%), (93.80%), IMO (40.50%), and Facebook (24.34%). The students spent the most hours per day in Telegram (2.16 h), Instagram (2.16 h), Line (1.62 h), and Viber (1.25 h) among the social networks. The most extended duration of membership in social networks for the students was related to Viber (3.39 years) and

Table 1: Demographic characteristics of nursing students participating in the study

Variable	Class	*n* (%)
Interest in the field of study	Yes	256 (67)
	No	126 (33)
Desire to continue education	Yes	255 (66.9)
	No	126 (331.)
Father's occupation	Self-employed	233 (62.80)
	Employee or retired	136 (36.70)
	Unemployed	2 (0.50)
Mother's occupation	Homemaker	310 (83.60)
	Employee or retired	56 (15.10)
	Self-employed	5 (1.30)
Father's education	Under high school diploma	136 (36.70)
	High school Diploma and associate's degree	152 (41)
	Bachelor's degree and above	83 (22.30)
Mother's education	Under high school diploma	211 (57)
	High school diploma and associate's degree	112 (30.30)
	Bachelor's degree and above	47 (12.70)
Academic semester	2	60 (15.70)
	3	54 (14.10)
	4	61 (15.90)
	5	57 (14.80)
	6	62 (16.20)
	7	55 (14.40)
	8	34 (8.90)
Number of children in the family	1-2	243 (43.10)
	3-4	163 (45.90)
	5 and above	39 (11)
Family income	Income more than expenditure	54 (14.30)
	Income equal to expenditure	236 (62.40)
	Income less than expenditure	88 (23.30)

Telegram (3.26 years). In response to "What have been the consequences of using social media for you?", most students reported sleepiness and reduced attention in the classroom. Furthermore, the priority of students in the use of the social network was Telegram, Instagram, WhatsApp, IMO, Twitter, and Facebook.

The priority of students for learning sciences and entertainment was Telegram and Facebook, respectively. The highest level of knowledge with regard to the features of social networks was related to Telegram and Instagram with 51.90% and 46.70% levels of awareness, respectively. The reasons for the membership of students in social networks, in terms of priority, were communication with friends, awareness of class news, learning scientific materials, entertainment, and friend-making. In addition, the interesting topics for the majority of students in the use of social networks were fun and entertainment, and their major problem was the high cost and low speed of the connection.

The mean (SD) of social networking usage was 116.81 (17.20) out of the achievable score range of 38-190, and the highest and lowest scores obtained in the social networking usage questionnaire were related to content

sharing (73.56%) and unconventional issues (51.00%), respectively. Moreover, the lowest and highest scores were related to items "I fully trust all social networks" and "I use social networks to communicate with my friends", respectively. The mean and standard deviation of various aspects of the social networking usage questionnaire are presented in Table 2. No significant statistical difference was found in the total score of social networking users based on the demographic variables of sex, marital status, occupation, residence, having children, and mother's occupation. The differences in social networking users based on other demographic variables are presented in Table 3. Pearson correlation coefficient also showed that there is a statistically significant relationship between the social networking usage and demographic variables of the average in the previous semester ($r = -0.36$, $p = 0.001$), average study hours at exam periods ($r = -0.28$, $p = 0.000$), grade point average of diploma ($r = -0.17$, $p = 0.001$), and average daily study hours in non-exam periods ($r = -0.10$ and $p = 0.04$). No statistically significant relationship was found among variables of age, daily study rate of non-school materials, average study hours in exam periods, and the total score of social networking usage ($p > 0.05$).

Discussion

This study aimed to determine the social networking usage among the nursing students of Tabriz University of Medical Sciences in 2018. The present study showed that the majority of students use at least one of the virtual social networks. In this regard, the results of a systematic review study and meta-analysis indicated that most of the students (75.00%) were members of social networks. In comparison, merely 20.00% of them used this technology to share educational information and

school materials.[7] In the present study, the most important reasons for the membership of students in virtual social networks were communication with friends, awareness of class news, learning scientific materials, entertainment, and friend-making dating. Pempek *et al.*,[14] examined the experiences of students with the use of virtual networks and found that communication with unavailable old friends at the moment was the most important reason for the use of virtual social networks by the students, which is consistent with the results of the present study. The ease of use of these networks and a wide range of information available from these databases are the most important reasons for students to use these networks to communicate with their old friends.

The results of this study showed that there was no significant relationship among social networking usage and age, gender, and marital status of students, which agrees with the results of Karpinski *et al.*,[15] who indicated that social networking usage had no significant relationship with variables of age and gender. Concerning the open-ended questions of the present study, the most important side effects of social networking usage were sleepiness and reduced attention in the classroom. In this regard, it can be posited that the excessive use of virtual social networks, especially at night, can lead to

Table 2: Mean and standard deviation of the total score and different aspects of the social networking usage questionnaire

Aspects	Mean (SD)*	Minimum	Maximum
Content sharing	18.39 (3.20)	10	44
Academic tasks	10.14 (2.07)	4	15
Learning scientific materials	9.98 (2.30)	4	15
Communication	32.18 (6.09)	14	44
Excessive consumption	15.55 (4.96)	5	71
Privacy	7.14 (2.53)	3	15
Trust in networks	8.10 (2.44)	3	14
Unusual issues	15.30 (5.01)	6	30
Total score	116.81 (17.20)	63	182

*SD=Standard Deviation

Table 3: Comparing the social networking users based on individual social characteristics of participants (independent sample *t*-test/ANOVA test)

Variable	Class	Mean (SD)	Statistical test and *p*-value	
Interest in the field of study	Yes	98.59 (15.67)	t=-3.04, df =380, *p*=0.003	
	No	106.04 (12.94)		
Desire to continue education	Yes	99.20 (15.20)	t=-2.73, df =379, *p*=0.007	
	No	104.67 (14.64)		
Father's occupation	Self-employed	104.76 (15.04)	ANOVA	Post Hoc
	Employee or retired	112.15 (12.70)	F=3.83, df=4,366, *p*=0.001	*p1 ,2=0.01, p1 ,3=0.02
	Unemployed	88.00 (1.41)		
Father's education	Under high school diploma	101.72 (14.87)	ANOVA	Post Hoc
	High school diploma and associate's degree	107.73 (14.45)	F=2.32, df=4,366, *p*=0.05	*p1 ,2=0.01, p1 ,3=0.01
	Bachelor's degree and above	109.57 (16.65)		
Mother's education	Under high school diploma	118.21 (16.52)	ANOVA	Post Hoc
	High school diploma and associate's degree	119.17 (16.33)	F=3.190, df=4,365, *p*=0.01	*p1 ,2=0.00, p1 ,3=0.001
	Bachelor's degree and above	115.00 (21.21)		
Academic semester	2	113.22 (10.28)	ANOVA	Post Hoc
	3	109.30 (14.79)	F=2.12, df=6,376, *p*=0.05	*p4 ,2=<0.001, p2 ,7=0.01
	4	103.94 (15.78)		
	5	101.41 (1.64)		
	6	113.00 (11.21)		
	7	124.50 (4.94)		
	8	127.66 (12.01)		
Number of children in the family	1-2	118.88 (15.50)	ANOVA	Post Hoc
	3-4	120.05 (14.28)	F=4.98, df=4,350, *p*=0.001	*p1 ,2=0.05, p1 ,5=0.001
	5 and above	109.30 (17.92)		
Family income	Income more than expenditure	111.75 (14.24)	ANOVA	Post Hoc
	Income equal to expenditure	107.78 (13.86)	F=6.28, df=2,375, *p*=0.001	*p1 ,3=0.02, p2 ,3<0.001
	Income less expenditure	99.02 (16.00)		

*within groups difference

insomnia, dyssomnia, and poor quality of night-time sleep.

Subsequently, this results in fatigue and sleepiness throughout the day during theoretical and clinical courses, which also directly reduces the concentration and indirectly decreases students' learning ability. These results are consistent with the findings of Lepp *et al*.[16] Moreover, the most widely used virtual social networks among participating students were Telegram, Instagram, and WhatsApp, and 51.90 and 46.70 of the participants were highly aware of features of Telegram and Instagram, respectively. These results are consistent with the findings of several previous studies.[17,18] However, this finding is in contrast with the results of the study carried out in Saudi Arabia, where the most widely used networks are Twitter and Facebook.[19] This difference can be due to a cultural difference between the two studied communities.

In addition, the results of this study showed that there is a statistically significant relationship among social networking usage, last semester grade point average, and average study hours in the exam and non-exam periods. The excessive and uncontrolled use of virtual social networks in academic environments, often for non-school purposes, can reduce the study time and lead to distraction, decentralization, and attention to irrelevant non-school activities. This, in turn, causes students' poor academic performance, educational underachievement, and educational course extension.[20] This study also showed that there were significant differences in terms of interests in study fields, desire to continue education, father's occupation, and education, mother's education, an academic semester, number of children, and family income variables, and network use.

The average use of social media is higher among students who are not interested in the field of study and unwilling to continue their education. Those who are disinterested in the field of study and reluctant to pursue education usually spend less time studying academic subjects and are more likely to engage in social networking.[21] The students with college-educated parents, high family income, and high-income parent jobs are more involved in social networking. High income is due to the availability of tools for parents to use the networks, and higher education is due to the use and familiarity of parents with these networks.[22] This study has some limitations. First, the generalization of the findings may be limited due to the homogeneous sample. Therefore, further studies should be conducted using a larger sample with a diverse socio-demographic background to obtain a better understanding of pattern use of virtual networking by nursing students. Second, there was a lack of a comprehensive and standard questionnaire to assess the pattern use of virtual social networks by nursing students and value their situations for social network usage. Therefore, we used a researcher-made instrument.

Conclusion

Based on the results of the present study, it can be concluded that the Internet and virtual social networks are an inseparable part of today's modern life and work as a double-edged sword. Thus, proper planning for virtual space management is essential to enjoy the advantages of social networks and reduce their disadvantages. Moreover, the officials and authorities in universities should inform students about the proper methods of cyberspace usage to ensure their safety and reduce the possible harmful effects. For example, holding specialized explanatory workshops could be helpful for students. Given the increasing use of virtual social networks among different groups of society, further studies should be conducted on other social groups such as students in different levels and universities. According to our findings, it could help pay attention to the advantages and disadvantages of networks and then design the most suitable training –learning programs. By adequately managing networks, we could focus on students' requests and satisfy their needs through effective management.

Conflicts of interest

Nothing to declare.

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